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THE OVARIAN FOLLICULAR HORMONE

ITS DISTRIBUTION IN HUMAN GENITAL TISSUES *

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AND
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In earlier work [1] it has been demonstrated that lipoid extracts of the contents of ovarian follicles quite completely substitute for certain phases of the internal secretion of the ovaries. This was done by injecting extracts of material from pig ovaries into rats and mice from which the ovaries had previously been removed. The action of the follicular hormone includes the production of striking growth in the female genital organs. The rapidity of this growth in the test animals is astonishing. An entirely new epithelial wall is produced in the vagina in forty-eight hours. This involves the addition of more than twelve layers of new cells (Fig. 2, in which *A*, the control animal, is to be compared with B and C, injected animals). In the uterus a corresponding growth occurs and the secretion of the glands, which is retained in these animals by cervical constriction, greatly distends the uterus (Fig. 3). The large numbers of dividing cells found in both the surface epithelium and the glands also indicate the rapidity of the growth processes in these tissues (Fig. 4). These growth and secretion processes in the genital tract induced by injections of active extracts into spayed rats and mice are equal to the maximum conditions normally attained in these animals under the secretion of their own ovaries.[2]

The literature on injections of ovarian extracts has recently been fully reviewed by Novak,[3] Marshall,[4] Frank,[5] Corner,[6] Carlson [7] and Lisser.[8] Therefore, it does not seem necessary for us to emphasize our point of view further than has already been done.[1] Recently Courrier,[9] Papanicolaou,[10] and Murphey and his collaborators [11] have published preliminary reports of important work on tests of ovarian extracts.

A DECISIVE PHYSIOLOGIC TEST FOR ACTIVITY

As the growth induced by injected hormone proceeds in the genital tract there is a definite change in the types of cells which are sloughed off from the vaginal wall into the lumen (Fig. 1). By identification of these cells in stained smear preparations, the effect of injected extracts can be followed accurately in the living animals. Leukocytes in smears from test animals indicate slow atrophy of the genital tract of the spayed animal. As growth is induced by injected extracts the leukocytes disappear, and when a certain number of new layers of epithelial cells have been added to the vaginal wall, cornification sets in and only flat epithelial scales are found in the smear. For our test purposes an extract to be considered active must induce sufficient growth to cause cornification.

THE RAT UNIT

The use of this maximum reaction of spayed rats to test extracts made up in graded series of dilutions furnishes a method of measuring in rat units the amount of hormone in different genital tissues. The rat unit is defined as the highest dilution of an extract which, when given to a mature spayed rat in three injections at four hour intervals during the first day, will return a positive test on the morning of the third day.

Maximum yields from extracts of contents of large follicles from pig ovaries range above 2,100 rat units per kilogram. In other words, 0.5 c.c. of liquor from large follicles usually contains enough hormone to return a positive test. Smaller yields from the contents

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

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of medium and small follicles from pig ovaries indicate that the concentration of this hormone increases with the growth of the follicles.

DISTRIBUTION IN ANIMALS OF DIFFERENT SPECIES

Next, extracts from follicles of several species of animals were tested to establish the expected nonspecificity of this material. To date, positive tests have been returned from extracts of follicles from pigs, cows, sheep, hens and human beings.

Figure 1

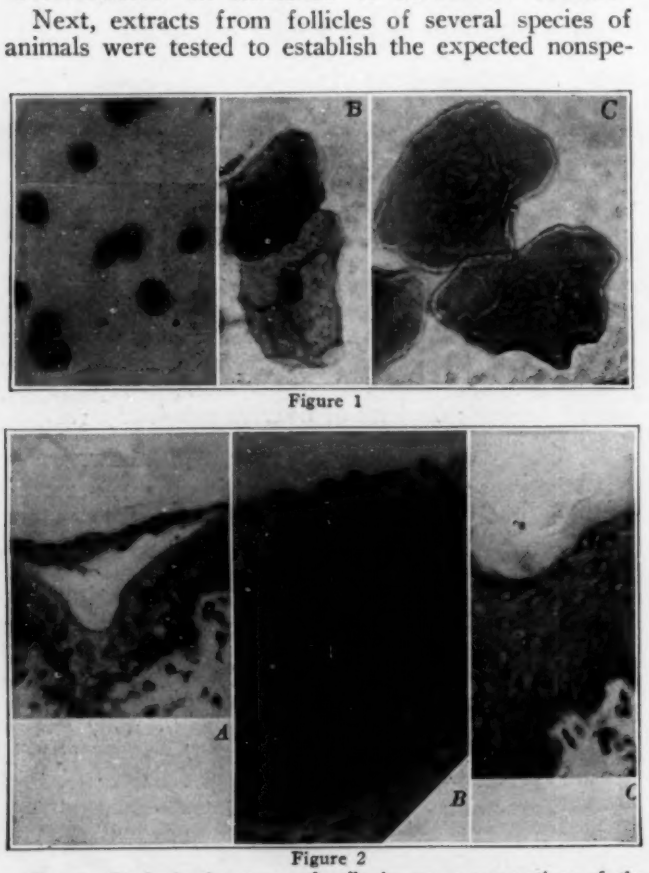

Figure 2

Fig. 1.—Predominating types of cells in smear preparations of the superficial cells of the vaginal walls, which are represented in Figure 2: *A*, leukocytes of the noninjected control indicating slow atrophy of vaginal wall; *B*, nucleated epithelial cells at the thirty-six hour stage; *C*, non-nucleated, cornified scales forty-eight hours after the first of a series of injections. The change from Type *A* to Type *C* on the third day of the experiment indicates a positive test. One control smear and four test smears are usually made during the course of the test (from three to four days).

Fig. 2.—Sections of the vaginal walls of test rats: *A*, noninjected control from eight to ten days after double ovariectomy, two to three layered epithelium infiltrated with leukocytes, which migrate through into the lumen; *B*, from test animal thirty-six hours after the first of three injections given in the first twelve hours; fourteen to sixteen layered epithelium, the outer two or three layers of light staining cells representing the old vaginal wall before new growth was induced by injections (note dividing cell in right center); *C*, from test animal forty-eight hours after beginning injections; the old vaginal wall has been sloughed into the lumen and a cornified layer is now superficially placed.

THE CORPUS LUTEUM

The next problem was to determine whether the corpus luteum, which develops in the ruptured follicle, continues to secrete this hormone, or whether its secretion ceases after ovulation. Corpora lutea of both estrus and pregnancy from pig ovaries grouped according to their stage of development were carefully excised, and extracts of amounts varying from twenty to several hundred grams tested. To date, more than thirty tests of different preparations of fully formed corpora have been negative.[12] More than twelve tests of separate preparations of corpora from cows have also been negative.

HUMAN OVARIAN TISSUES

Cystic Follicles.—Our first tests of human ovarian tissues were made on extracts of material aspirated from abnormally large follicular cysts after removal of ovaries at operation.[13]

Normal Follicles.—The difficulty of obtaining normal material from the follicles of human ovaries is readily appreciated. Since the material from human ovaries is selected from cases at operations, the supply is necessarily very limited. It is evident that the causes which would lead to operative exposure of the ovaries would often be associated with pathologic conditions, so that the ovaries could not be considered normal. It has seemed important, therefore, to limit the material described in the following sections to specimens that had all gross appearances of being normal:

The follicles chosen for removal of fluid were always 1 cm. or less in diameter. The contents were aspirated into a Luer syringe, the needle being inserted to one side of the follicle so as to pass through a small portion of ovarian tissues, thus preventing the loss of fluid that occurs when puncture is made directly through the thin follicle wall (Fig. 5). The same needle was used to aspirate the contents of all follicles found in the two ovaries. This fluid appeared clear, showing that it was free from blood. An equal volume of 95 per cent. alcohol was immediately added, whereupon a white, curdly precipitate settled out. In alcoholic solution this material may be stored for subsequent extraction.

It is well established that ovarian structures, both follicles and corpora lutea, are transient structures quickly replaced after removal by compensatory growth in the remaining follicles. Furthermore, there is no bleeding or other evidence of trauma to the ovaries in needle puncture for removal of follicular fluid as described above. Consequently, the removal of this material from the ovaries seems justifiable to us. In no case have the ovaries been removed for purely experimental purposes.

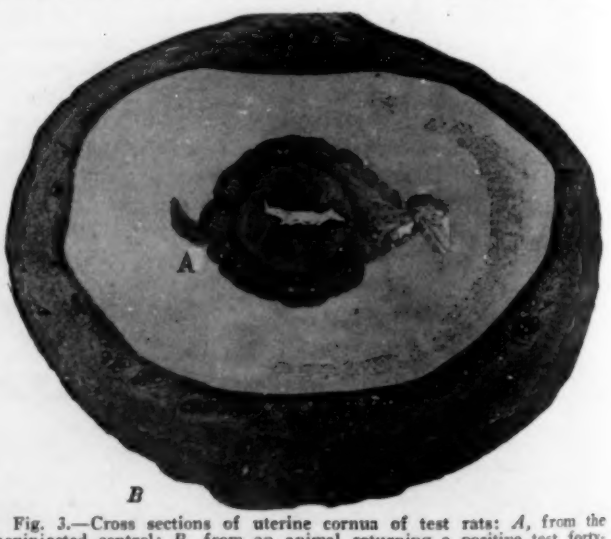

Fig. 3.—Cross sections of uterine cornua of test rats: *A*, from the noninjected control; *B*, from an animal returning a positive test forty-eight hours after the first of a series of injections.

The first two specimens of human liquor folliculi tested, each 0.5 c.c. in volume, failed to give positive reactions. A third specimen of 3 c.c. was positive and

12. We are indebted to C. G. Johnson and V. L. Gould in work as yet unpublished for some of these tests. Dr. Doisy placed in the scientific exhibit some specimens to show the effects of water soluble commercial preparations and his lipoid extracts of follicular contents and corpora lutea from pigs.

13. These data will be presented in a later paper.

when tested in dilution proved to contain 1.3 rat units of hormone. A fourth specimen consisting of 11.5 c.c. of follicular contents aspirated from several patients over a period of several months was tested as follows: The residue from extraction with lipoid solvents was dissolved in 6 c.c. of mazola oil, which was then made up in graded dilutions. Each dilution was made up to a volume of 3 c.c., and 1 c.c. injections were given to test animals at 8 a. m., 1 p. m. and 5 p. m. In this way the greatest dilution giving a positive test was determined. It was found that 0.07 c.c. of the original 6 c.c. of oil soluble extract returned a positive test in the spayed mature rat. This amounts to only six drops of oil solution, or to 0.14 c.c. of the original follicular fluid. Figuring from these results gives a determination of more than 7 rat units per cubic centimeter of original material, or 7,390 units per kilogram.

The Corpus Luteum.[14]—The corpora lutea chosen for study were all from ovaries that were apparently normal. A careful examination was made of both ovaries and only the most recent corpus removed; consequently, specimens of this group were less than 1 month old. They were excised at varying stages in the menstrual cycle and, in cases in which several were extracted together, they were grouped according to the number of days following the onset of menstruation.

A small incision was made through the thinned out capsule and the corpus cleanly enucleated without injury to any of the surrounding follicles (Fig. 6). In cases in which the corpus had not become organized into a solid tissue mass, care was taken to preserve the fluid in the "central lake." After removal, the capsule collapsed into the cavity that had been occupied by the corpus. In most instances it was not necessary to close this, but in some cases the raw area was covered over by a few sutures.

The first corpus luteum to be tested displaced only 1.4 c.c. of fluid. It was excised two weeks following the onset of menstruation (Fig. 7). The extract in full strength returned a positive test, but in 1:3 dilution proved negative. Since this time we have tested extracts of corpora as listed in Table 1, the specimens being tested singly or in small groups according to their time relation in the menstrual cycle (Figs. 7, 8, 9 and 10). The majority of corpora [15] so far tested have contained some of the follicular hormone. The number of rat units indicated by quantitative analyses,[16] however, is less than our best results from tests of follicular fluid.

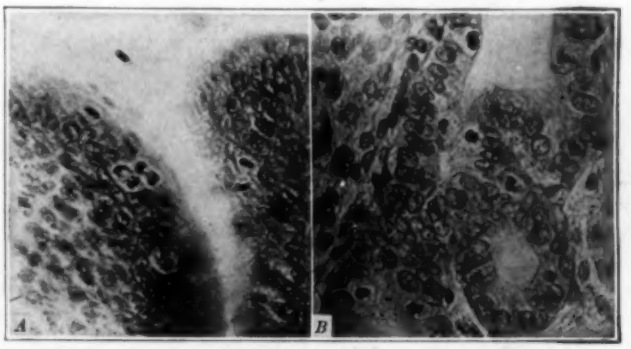

Fig. 4.—Oil immersion fields to show the extreme hyperplasia of the uterus of a test rat forty-four hours after the first of a series of injections: *A*, surface epithelium with six cells in mitotic division; *B*, fundus of a gland from same uterus with five dividing cells.

TABLE 1.—*Tests of Human Corpora Lutea for Presence of the Follicular Hormone*

Extract No.	Specimen	History or Description	Volume of Specimen, C.c	Equivalent of Material Tested, C.c.	Result	Yield in Rat Units per C.c. of Tissue
57	Corpus luteum.....	1st week post menstrua.....	1.0	0.7	—	<1.3
54	Corpus luteum.....	2d week post menstrua.....	1.4	0.9	+	>1.0
				0.2	-	<4.3
5 C	Corpus luteum.....	2 weeks post menstrua.....	1.4	0.9	+	>1.0
				0.3	—	<3.3
8 C	Several corpora.....	Between menstrual periods, one corpus after recent ovulation..	5.0	3.3	+	>3.3
				0.08	—	<12.5
6 C	Corpus luteum.....	3 weeks post menstrua.....	5.0	3.3	+	>0.3
7 C	Corpus luteum.....	3 weeks post menstrua.....	2.6	1.7	+	>0.5
52	Five corpora.....	3d week post menstrua.....	9.0	0.2	+	>3.7
				0.18	—	<4.4
51	Four corpora.....	4th week post menstrua.....	8.0	0.5	+	>2.0
				0.3	±	3.3
				0.2	—	<4.0
58	Corpus luteum.....	24 days post menstrua (fluid center).....	3.3	1.9	+	>0.5
				0.6	±	1.5
				0.3	—	<3.3
9 C	Corpus luteum.....	25 days post menstrua.....	2.0	1.3	+	>0.7
				0.4	—	<2.2
10 C	Corpus luteum.....	Center contained clear fluid.....	2.0	1.3	—	<0.7
204 C	Two corpora.....	No history.....	3.5	2.3	+	>0.4
				0.7	—	<1.2
56	Several corpora.....	No history.....	4.0	2.4	+	>0.4
				0.8	—	<1.2
11 C	Corpus luteum.....	1st month of pregnancy.....	1.0	0.6	+	>1.5
				0.2	—	<4.5
13 C	Corpus luteum.....	2d month of pregnancy.....	1.0	0.6	±	1.5
14 C	Corpus luteum.....	3d month of pregnancy (yellow luteal rim, white coagulum in center)	1.5	1.0	+	>0.9
				0.3	—	<2.8

These results indicate that there is a functional difference in corpora lutea in different species of animals; that the human corpus luteum, unlike that of the pig and cow,[17] continues to secrete the follicular hormone in appreciable amounts for a considerable period following ovulation. As indicated from the quantitative

14. The corpus formed in the absence of pregnancy.

15. Allen, Edgar; and Doisy, E. A.: Continuation of Secretion of the Ovarian Follicular Hormone by the Human Corpus Luteum, Proc. Soc. Exper. Biol. & Med. **22**: 303 (Feb.) 1925.

16. Nos. 52 and 51 have given the highest yields; these results are the most significant because of the quantity of material extracted.

17. These animals supply the material from which commercial corpus luteum extracts are manufactured.

tests, however, this secretory function of the human corpus is probably waning.

It seems probable to us that this continued secretion of the follicular hormone by the corpus in woman may be one of the determining factors in the menstrual hemorrhages.[18]

The Corpus Luteum of Pregnancy.—Positive tests have been returned from each of two corpora removed during the first and third months of pregnancy (Fig. 11; Table 1, 11 C and 14 C). In the first case it was of course not known at the time of excision of the corpus that the patient was pregnant. The corpus was removed on the twentieth day after the onset of menstruation, the pregnancy not being discovered until two months later. There was no history of copulation following the operation. The gestation period of 272 days was normal throughout. The corpus taken during the third month was removed because of the serious condition of the patient in the hope that it would terminate the pregnancy according to the theory that the corpus is necessary during early gestation. The amount of hormone found is indicated in the table. In the case of the corpus removed during the second month of pregnancy, an accidental loss of a large part of the extract made a decisive test impossible. In spite of this misfortune, some growth was indicated in the smears, although a definite positive test was not returned. This patient later gave birth to a normal, full-term baby, the gestation period being normal throughout.

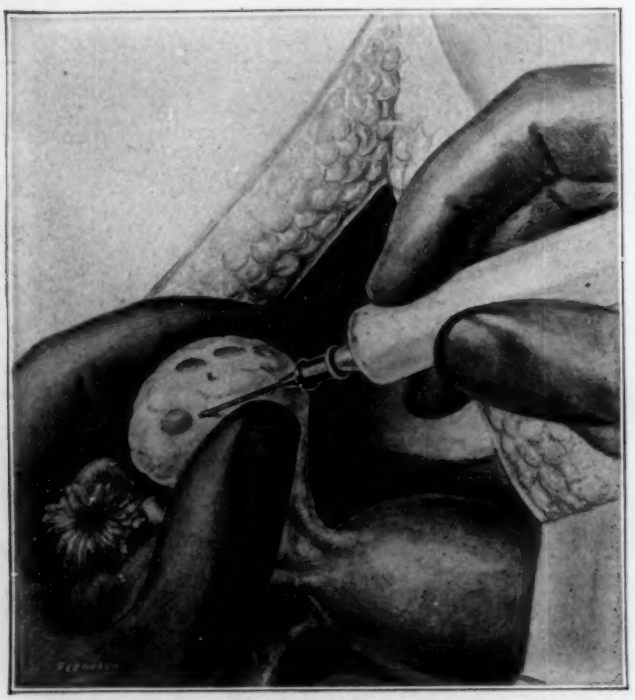

Fig. 5.—Aspiration of follicular contents from the human ovary at operation.

These results indicate that the corpus of pregnancy continues the secretion of the follicular hormone, but they also indicate that normal gestation may continue after excision of the corpus even at the end of the third week following the last menstruation.

EXTRACTS OF HUMAN PLACENTA

Since the pioneer work of Starling and Claypon in 1905, several investigators [19] have worked with extracts of human placenta, usually the human placenta at full term. They have used uterine reactions or growth of the mammary glands as criteria of activity of extracts. We have shown that lipoid extracts of placenta also cause full estrous growth in the vagina of rats and mice just as the follicular hormone does. As yet we have found no reliable method of differentiating between the ovarian follicular hormone and active placental extracts. Using the rat test, we have analyzed quantitatively placentas taken at several stages of gestation. These results are listed in Table 2. It will be noted that there is about ten times as much hormone in the three months placenta as was extracted from the corpus luteum of pregnancy of the third month. In the full term placenta there is from eight to twenty times as much active material as in that at three months. Of course, there is a great increase in the mass of tissue in the placenta with the continuation of gestation. Although the placenta of the three months embryo contains this active substance in con-

TABLE 2.—*Tests of Placentas, Umbilical Cords, Embryos and Embryonic Vesicles for the Presence of Active Substance*

Extract No.	Specimen	History or Description	Weight or Volume	Total Number of Rat Units	Equivalent of Material Tested	Yield in Rat Units per Gm. of Tissue	Result
YP	Placentas*	Full term	>515 gm.	>120	5.0	>0.2	+
			<680 gm.	<420	1.3	<0.7	−
6 P	Placenta	7th month	.....	.....	...	.....	+
8 P	Placenta †	Early 4th month	99.5 gm.	>30	3.3	>0.3	+
					2.4	<0.4	−
7 P	Placenta	3d month	.....	>15	...	.....	+
1 M	Curetted material	2d month (no embryo recovered)	17 gm.	>8	2.0	>0.4	+
					1.3	<0.7	−
11 E	Chorionic vesicle (intact)	2d month contained 20 mm. embryo C. R. ..	14.6 c.c.	>5	2.0	0.3	+
12 E	Chorionic vesicle (intact)‡	6th week, contained 12.5 mm. embryo	10 c.c.	.....	...	.....	+
2	Three umbilical cords	Full term normal deliveries	.....	.....	...	.....	+
3	One cord and amnion	Normal full term	35 c.c.	.....	...	.....	+
4	One cord (17 in.)	Full term	.....	.....	...	.....	+
8 E	Embryo alone from 8 P	Early 4th month	60.7 gm.	<2	30.0	0.0	−
7 E	Embryo alone from 7 P	3d month, 43 mm. C. R.	.....	<1	....	...	−
4 E	Embryo alone	2d month, 32 mm.	.....	<1	....	...	−

* More than twenty extracts of different placentas have been tested (Footnote 1, third reference).
† We are indebted to Dr. D. S. Conley for this specimen.
‡ Tests made in mice.

18. The uterine hemorrhage characteristic of the menstrual cycle in primates is not present in the normal estrous cycle of the lower animals.

19. Fellner, O. O.: Centralbl. allg. Path. u. path. Anat. **23**: 673, 1912; Arch. f. Gynäk. **100**: 641, 1913. Frank, R. T., and Rosenbloom, J.: Physiologically Active Substances Contained in the Placenta and in the Corpus Luteum, Surg., Gynec. & Obst. **21**: 646, 1915. Hermann, E.: Monatschr. f. Geburtsh. u. Gynäk. **41**: 1, 1915.

siderable concentration, we have been unable to get positive tests from extracts of the embryo alone (Table 2, 4 E, 7 E, 8 E).

It may be possible to determine whether the embryonic or maternal part of the placenta contains this material. Some experimental data on this point might lead to a solution of the question of whether this substance is secreted by the placenta or is produced in the ovary and merely secondarily retained in the placenta. It is, of course, quite impossible to make a clear-cut separation of the maternal and embryonic components of the human placenta.

EMBRYONIC TISSUES

The nearest approach to this so far has been in the recovery of two intact chorionic vesicles dating from the latter half of the second month and in tests of full term umbilical cord. Both of the embryonic vesicles [20] were from ectopic pregnancies; in one case the tube had ruptured, and the embryonic vesicle (Fig. 12) was lying free in a blood clot in the peritoneal cavity. Histologic section of the tube showed some villi still in place, but sections of the embryonic membranes showed little adherent maternal tissue. Extracts of these vesicles (Table 2, 11 E and 12 E) proved positive. Extracts of several different umbilical cords clipped from full term human placentas have also returned positive results. These tests demonstrate that although the embryo itself contains little or no active substance, the embryonic tissue of its membranes contains the hormone. One specimen from a pregnancy of the second month composed of 17 gm. of curetted material, in which both placental tissue and uterine mucosa were readily identified, contained 8 rat units of hormone. It has not yet been possible to get uterine mucosa alone from an early pregnancy to make tests for active substance in purely maternal tissue.

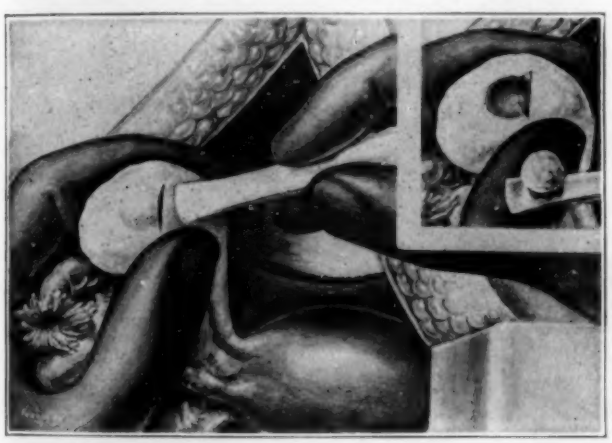

Fig. 6.—Technic of removal of the human corpus luteum at operation.

ENDOCRINE FUNCTION OF THE PLACENTA

It is probably too early to draw general conclusions concerning the endocrine function of the placenta. It is rather difficult, however, to see how such large quantities of active substance could be retained in such a vascular organ as the placenta without passing freely into the maternal circulation. Since it is so well established that development of the follicles is seriously inhibited during pregnancy, it would seem to us more probable that the human placenta takes over from the ovaries the major part of the function of the secretion of this hormone, thus maintaining the maximum function of the genital tract and initiating growth in the mammary glands during gestation. The increased amounts of this hormone in the maternal organism would seem a logical cause of the hypertrophy of other endocrine organs during pregnancy. Whether this function is borne by the embryonic tissue of the placenta or by both maternal and embryonic parts acting as a unit is still to be determined.

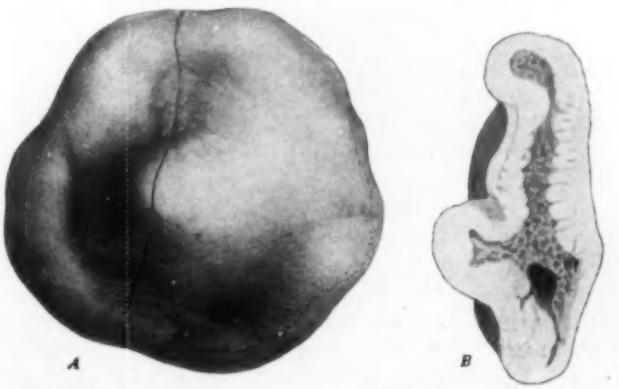

Fig. 7.—Corpus luteum removed three weeks after onset of menstruation: *A*, surface view with cross section *B* indicated; *B*, section to show collapsed condition of this corpus.

FROM A COMPARATIVE POINT OF VIEW

A comparison of the endocrine function of the ovaries of birds, lower mammals and primates is interesting. In the hen, with ova maturing daily and without any corpora lutea developing,[21] successively ripening follicles produce the hormone which keeps the oviduct in a condition of functional activity. In the pig and cow, with twenty-one day cycles, although the corpus luteum is a well developed structure, our tests indicate that it does not continue the secretion of the follicular hormone to any appreciable degree. In woman, in whom the cycle is a week longer, the corpus forming after ovulation does continue to secrete the follicular hormone. Does this perhaps indicate an evolutionary trend in ovarian physiology?

Another question of utmost importance concerns the hormone present in the placenta (woman and cow). If the placenta itself secretes this substance, what is the mechanism of balance between placenta and ovaries, or does the placenta merely collect and retain the hormone produced in the ovaries either by the partially developing follicles or (in man) by the corpora lutea? The phylogenetic development of this function in relation to viviparous reproduction offers wide fields for more work.

SUMMARY AND CONCLUSIONS

1. A determination of the amount of active substance extracted from different human genital tissues is made.

2. This is measured in rat units by means of a decisive anatomic and physiologic reaction of the genital tract of the spayed rat to injected lipoid extracts.

3. The follicular hormone is present in greater concentration in large ovarian follicles of women than in those of pigs.

20. We are indebted to Dr. Hugh P. Muir of Parker Memorial Hospital, and Mr. F. L. Kneibert of Boone County Hospital, Columbia, Mo., for these specimens.

21. Nonidez, J. F.: Estudios sobre las gonadas de la gallina, Libro en honor de D. Santiago Ramon y Cajal **2**: 137, 1922.

4. In pigs and cows, the secretion of this hormone ceases or wanes rapidly following ovulation; in women, it is continued after ovulation by the corpus luteum for a considerable period.

5. It seems possible that this may prove to be one of the principal determining factors in the difference between the estrous cycle of lower mammals and the menstrual cycle of primates.

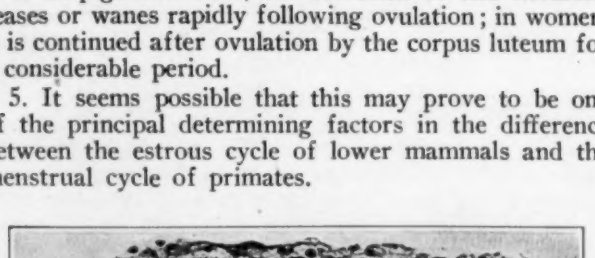

Fig. 8.—Section of thin walled corpus removed between periods.

6. Extracts have been made of placentas from women and cows which give the same growth reaction in test animals as does the ovarian follicular hormone.

7. The human corpus of the first and third months of pregnancy contains some active substance, but the placenta contains much larger quantities.

8. The evidence presented indicates that the corpus can be excised as early as twenty days following the last menstruation without interfering with normal gestation; consequently, this endocrine function of the corpus in woman during this time does not seem a necessary one.

9. Two possibilities present themselves to explain placental endocrine function: either (1) the hormone

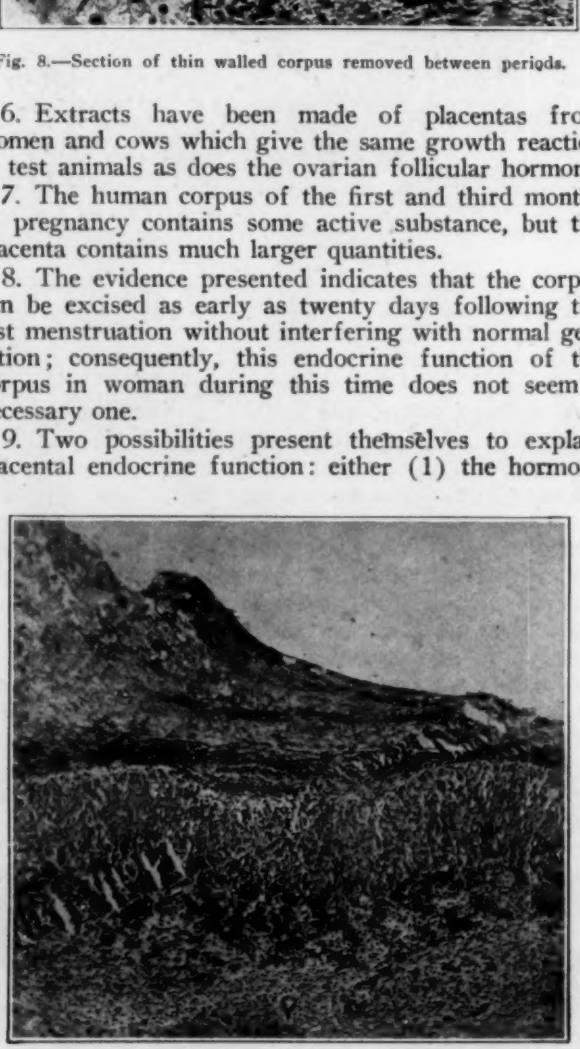

Fig. 9.—Section of wall of corpus removed three weeks after menstruation with layer of connective tissue cells lining luteal cell layer and surrounding large "central lake."

extracted from the placenta is elaborated there, or (2) it is retained there after being formed in the ovarian follicles or (in woman) in the corpus luteum. Further experimental evidence is necessary to settle this point.

10. Whichever proves to be the case, the balance of endocrine function between ovaries and placenta offers a fertile field for more work.

ABSTRACT OF DISCUSSION

DR. EMIL NOVAK, Baltimore: It is very fine that American anatomists and physiologists have taken such vigorous hold of this, probably the most fundamental of gynecologic and obstetric problems. I fear that many who read this paper will seek at once to translate it into the language of therapeutics, although I am sure that this was the least of the incentives that the authors had in presenting it. Although this work was done on animals, its results are unquestionably applicable, in a general way, to man, provided we bear in mind the real nature of the analogy existing between the human menstrual cycle and the estrual cycle in animals. For example, many speak of the actual period of heat (the estrum) as if it were the analogue of the menstrual phase in women. As a matter of fact, it corresponds to the postmenstrual phase in women, while it is the proestrum in animals, with its period of growth followed by degeneration, that corresponds to both the premenstrual and menstrual stages in the human cycle. The work of Dr. Allen and his associates has been important in stressing the rôle of the graafian follicle. I do not, however, believe it to be all important, even in lower animals, and much less in the woman. The human ovum is thrown off ordinarily at from

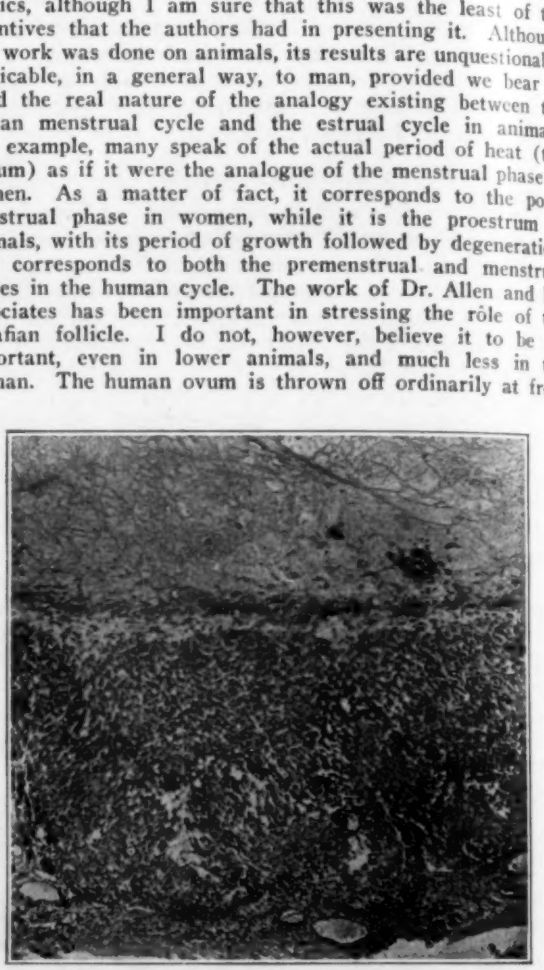

Fig. 10.—Corpus removed during the fourth week of the cycle: reticulated central mass.

the twelfth to the fifteenth day of the cycle, and a new corpus luteum thus starts its life history, while at the same time new follicles are ripening. It is therefore not surprising that the same active principle has been found in the follicles and in the early corpus. It is this principle which is probably the cause of the slow developmental changes in the endometrium, up to the premenstrual or pregravid stage. The latter is characterized by secretory and other changes so strikingly different from the early changes that it does not seem possible that the same cause can be responsible. The corpus luteum, now mature, is almost certainly responsible for these. Again, menstruation is a degenerative process, with loss of tissue. It is difficult to believe that this is linked up with the growing follicle rather than with the retrogressive corpus luteum always found in the ovary at this time. Every surgeon can testify that the removal of the maturing corpus luteum will precipitate the menstrual flow, which perhaps ordinarily would not be due for several days. Graafian follicles undergo varying degrees of maturity long before the inauguration of menstruation at puberty, but corpora lutea are found only after puberty. Other similar observations might be mentioned, all suggesting that the ovary is an organ of multiple interlocking function and that the graafian follicle, the corpus luteum and the ovum itself are all important in this intricate but beautiful mechanism.

DR. A. J. CARLSON, Chicago: This work is both new and important. I have followed it with great interest. But I am disturbed by Allen's finding that the substance is present in organs other than the ovary; namely, in the placenta, in the fetus, and also in the corpus luteum of pregnancy in the human female. That raises the question whether he has the normal hormone complex in the follicular fluid; whether there are various lipoid soluble substances present or whether there is a splitting of the substance in the methods of preparation and preservation. That latter possibility is suggested by the fact that so far the hormone appears to be strictly only lipoid soluble. It seems quite clear that, if this hormone passes from the follicle into the blood to be distributed from the uterus and vagina and other parts of the body, it must be soluble in the blood; that is, in salt solution. Dr. Allen stressed the fact that so far no effect has been produced by this hormone administered by mouth. It must be given hypodermically. Assuming that the substance is really a normal ovarian hormone, does that not bring a lesson to those who have employed ovarian therapy by mouth? Does it not suggest that most of the ovarian preparations on the market are to be avoided, since the lipoid soluble materials have in most cases been taken out, and even if the hormone is in the material, it fails to act by mouth? I wonder whether Dr. Novak did not partly misunderstand Allen's position. As I understood this report, Allen has done no work injecting this material in either spayed or normal women to see its effect. He has obtained material from human sources and used this on his animals.

DR. ROBERT L. DICKINSON, New York: The question has been raised whether any of this work is applicable to the woman. Stockard and Papanicolaou showed, in 1917, that just as there is a cycle in the mucous membrane of the uterus which can be recognized in its stages of development and retrogression, so in the vaginal mucous membrane there is a cycle which can be demonstrated in lower animals by so simple a method as taking a smear from the vagina, whereby ovulation is accurately gaged. At Woods Hole last summer I asked how the test could be applied to women, whereupon the Committee on Maternal Health arranged for the test and supplied half the funds for work at the Woman's Hospital in New York. These daily vaginal smears of a long series of women for months will show whether we can determine when ovulation occurs. If it works,

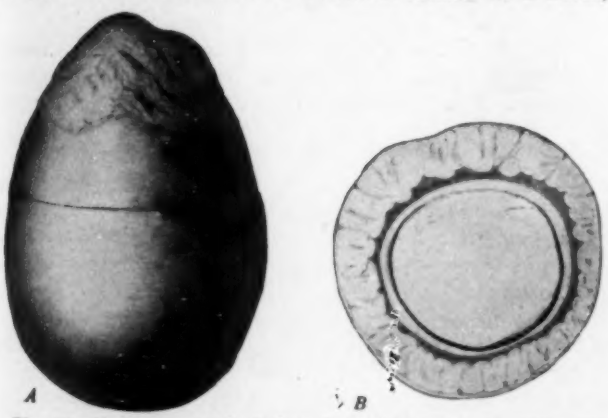

Fig. 11.—Corpus removed during the third month of pregnancy: *A*, full view; *B*, cross section.

it will tell us whether or not a given ovary is at work; whether in pregnancy cessation of ovulation has occurred; what is the "safe period" for a given woman, and it also shows whether a given ovarian or other extract used in women does or does not affect ovulation. The female sex hormone, says Robert Frank, who first, I understand, collected it from the ovarian follicle, is in three forms: He uses the follicular fluid and lipoid extracts from the later stages of the corpus luteum, and from the placenta and gets positive results by all three methods. In white rats, using the device introduced into this type of research by Allen and Doisy, all three produce results. There is another test which Frank has developed, that of studying contraction of the uterus after the method of Blair. A rapid rate of contraction is negative; a slow rate is positive.

DR. GEORGE GRAY WARD, New York: I wish to correct one statement Dr. Dickinson made, which was that the funds for this research work at the Woman's Hospital were being provided by the Committee on Maternal Health. One half of the funds have been provided by the committee and the other half by the board of governors of the Woman's Hospital. I make this statement only because I feel that the board of governors would like to have that known. I wish to say, in addition to what Dr. Dickinson has said, that this work of Stockard and Papanicolaou will be valuable in another direction. They have been able to tell when conception has occurred by examination of vaginal smears long before any physical signs can be determined. So far as we have gone in the work

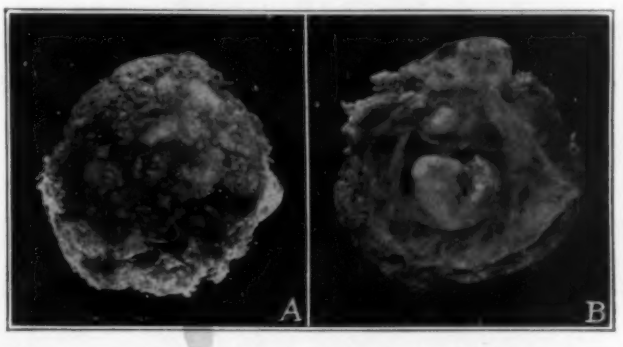

Fig. 12.—*A*, chorionic vesicle found free in a blood clot in the peritoneal cavity: *B*, vesicle opened showing 12.5 mm. embryo with the amnion and the yolk sac (just above the head).

at the Woman's Hospital in the prenatal clinic, this point has been confirmed in the human being as well. They have also been able to tell when conception has terminated by death of the ovum as, for instance, in an ectopic gestation or abortion.

DR. EDGAR ALLEN, Columbia, Mo.: To discuss briefly one of the points brought out by Dr. Novak, that of the differences between the lower mammals and man: We think that the continuation of the secretion of this hormone in considerable amounts by the human corpus luteum may possibly prove to be one of the important causal factors contributing to the difference between the human menstrual cycle and the estrous cycle in the lower mammals. Our quantitative analyses so far show less active material in the human corpus than in the follicular fluid, seeming to indicate that the hormonal function of the human corpus in the absence of pregnancy is waning from a maximum attained by the follicle before ovulation. Dr. Carlson has stressed the various human tissues that contain this active substance. It is, indeed, an interesting puzzle as to why the placenta (in women and cows) should contain this material. But since the follicular hormone may be extracted from the ovary of the hen, which species has neither corpus luteum nor placenta, the plylogenetic origin of this female sex hormone must in the ultimate analysis be referred to the follicle or even to the ovum itself. Dr. Dickinson's reference to his work with Dr. Papanicolaou on vaginal smears as an aid to the diagnosis of ovarian conditions in women is interesting. We have also made similar tests, in collaboration with Dr. Q. U. Newell, on vaginal smears from patients in the gynecologic clinic. Although we found a decided variation in the numbers of leukocytes and epithelial cells at different times in the cycle, results were not nearly so clear-cut as in rats, because normally no cornification occurs in the vaginal epithelium of women. Furthermore, the smear test is of greatest value in animals, in which sexual changes are not clearly marked externally. In the primates, menstruation furnishes such a prominent milestone that vaginal smears seem of secondary importance for diagnosis.

Laboratory Work in State.—Either state or local laboratory facilities should be provided to aid in the diagnosis of communicable diseases and to control water and milk supplies. It is especially desirable to have a laboratory in connection with the county health department when state labotatory facilities are not located so as to be available for prompt service.—Parran, Thomas, Jr. **40**:988 (May 15) 1925.

DILATATION OF THE URETER AND KIDNEY PELVIS DURING PREGNANCY

A PYELOGRAPHIC STUDY *

HERMAN L. KRETSCHMER, M.D.
AND
N. SPROAT HEANEY, M.D.
CHICAGO

The severest case of acute pyelitis of pregnancy that ever came under our observation was one in which the patient was in the fifth month of her first pregnancy. She was taken seriously ill, with a temperature of 103.4 F. The urine from the right kidney showed 2,560,000 pus cells and from the left kidney, 2,880 pus cells per cubic millimeter, and the cultures showed *B. coli*. There was marked prostration, icterus, and acute dilatation of the heart. The ureteropyelograms showed enormous dilatation of both kidney pelves and ureters, with extreme torsion and kinking, and marked outward displacement of both ureters.

GROUP 1. ACUTE PYELITIS

In a study of eleven subsequent cases of acute pyelitis, there was marked dilatation of both ureters and kidney pelves in six cases. In two cases only one side was injected, in both of which cases the injected side was found dilated. In three cases in which both ureters were injected, the right ureter and kidney pelvis showed enormous dilatation in two cases and only marked dilatation in the other, while the left ureter and pelvis were normal in all three cases.

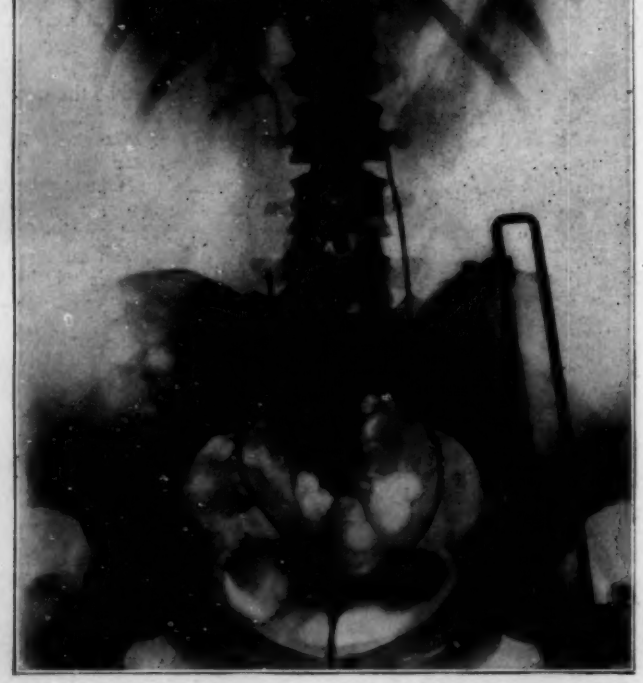

Fig. 2.—Primipara: Aug. 21, 1924; normal pelvis and ureter in early weeks of pregnancy; to be compared with Figure 3.

These findings correspond to the general impression held regarding the presence of dilatation of the kidney pelvis and ureter in pyelitis of pregnancy.

Since dilatation of the ureters and of the kidney pelves was so uniformly found, the question arose as to whether this dilatation occurs only in such patients as develop pyelitis, or whether it occurs commonly in pregnancy and is, in consequence, a predisposing factor in pyelitis.

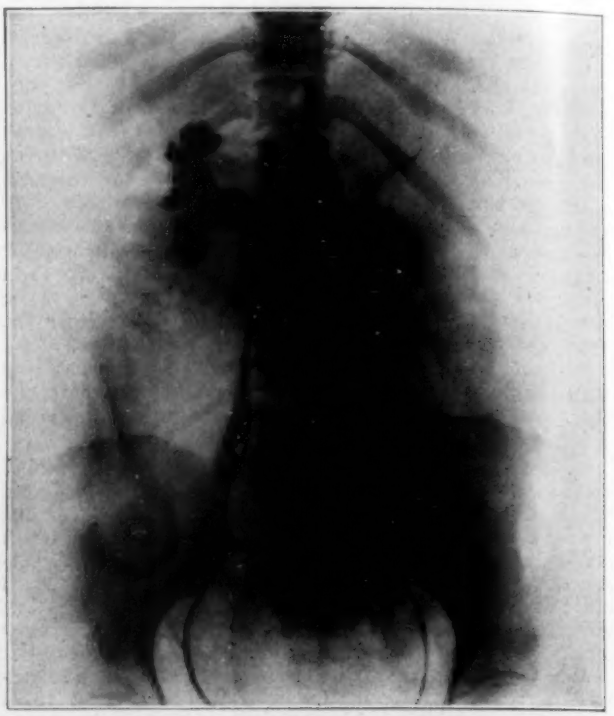

Fig. 3 (Mrs. M.).—Primipara: late pregnancy, Feb. 26, 1925; spindle-shaped dilatation of right ureter; dilated pelvis and calices; to be compared with Figure 2.

GROUP 2. NORMAL CASES

We therefore studied nineteen cases of normal pregnancy, selecting only such patients as were free of the usual symptoms and signs ordinarily considered as indicative of infection in the urinary tract, with the following results:

In the nineteen cases in this series, bilateral dilatation was found in nine cases (47.36 per cent.). In seven cases the kidney pelvis and ureter were dilated on only one side (36.84 per cent.). (In three of the seven cases only one side was injected.) In three cases no dilatation was found (15.8 per cent.). In one of the latter three cases the pelves were normal but the ureters were not filled with the bromid solution.

The three cases showing no dilatation were as follows: quadripara, at term; primipara, at 32 weeks; primipara, at 25 weeks.

The nine cases showing bilateral dilatation were as follows: primipara, at 6 months, two cases; primipara, at 7 months, one case; secundipara, at 8 months, two cases; primipara, at term, three cases; quadripara, at term, one case.

The seven cases showing dilatation of only one side were as follows: primipara, at 6 months, one case; secundipara, at 3 months, one case; secundipara, at 5

* From the A. D. Thompson Medical Fund for Genito-Urinary Surgery and the Presbyterian Hospital.
* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.
* Because of lack of space, this article is abbreviated in THE JOURNAL by the omission of several illustrations. The complete article appears in the Transactions of the Section and in the authors' reprints. A copy of the latter will be sent by the authors on receipt of a stamped addressed envelop.

months, one case; secundipara, at term, one case; tertipara, at term, one case; quintipara, at 8 months, one case; one patient in whom the parity was unknown, at 8 months, one case. In these seven cases the dilatation occurred on the right side six times and on the left side only once.

The assertion has often been made that primiparas are more commonly predisposed to pyelitis of pregnancy than are multiparas, because the tense abdominal walls increase the pressure of the pregnant uterus against the ureter; in view of this it is interesting to note the relationship between parity and the presence of dilatation in the normal cases described above. Of the three patients showing no dilatation, two were primiparas. Of the nine patients showing bilateral dilatation, five were primiparas and four were multiparas. Of the seven patients showing dilatation of only one side, one was a primipara.

The frequency with which the right ureter is affected in pyelitis of pregnancy has been by some brought into relationship with the frequency with which engagement occurs in the right oblique diameter of the pelvis; i. e., that pressure of the presenting head is the responsible factor. It will be noted in the foregoing seven cases that in three the pregnancy was so early that presentation could not come into consideration. In the single case with dilatation of the left ureter, the pyelogram was made the day before delivery and the head was

Fig. 5.—Primipara: sixth month; normal urine; pain in right side of abdomen; dilatation of right pelvis; slight dilatation of right ureter; left pelvis normal; slight clubbing of calices.

engaged in the right oblique (left occipito-anterior), in which oblique, compression of the left ureter from the fetal head could not have occurred.

GROUP 3. PATIENTS GIVING A HISTORY OF PYELITIS BEFORE COMING UNDER OUR OBSERVATION BUT AT PRESENT WITHOUT SYMPTOMS

These patients gave a history of a previous pyelitis either before marriage or during a previous pregnancy, but were free from urinary symptoms and were negative on physical examination at the time that they presented themselves for obstetric attention.

In this group there were six cases, as follows: Bilateral dilatation, two cases, 33⅓ per cent.: primipara at 5th month and secundipara at 3rd month. Unilateral dilatation, three cases, 50 per cent.: secundipara at 6th month, right side dilated; quadripara at 8th month,

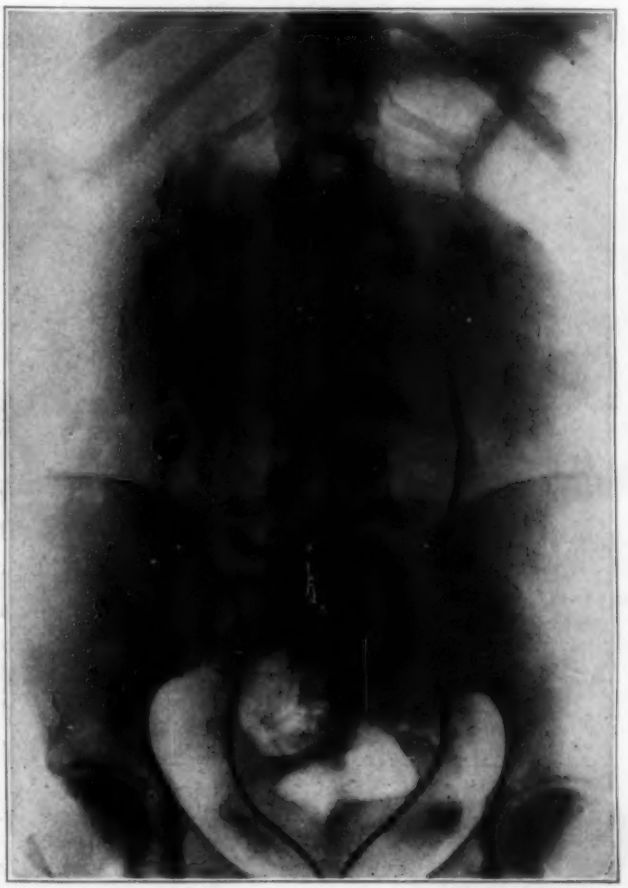

Fig. 9.—Dilatation of right ureter and calices; urine normal; history of pyelitis before marriage; urine sterile.

right side dilated; octipara at 5th month, right side dilated. No dilatation, one case, 16⅔ per cent.: primipara at 35th week.

It will be noted that, by comparing the percentages found in Group 3 with those given under Group 2, bilateral dilatation, unilateral dilatation and absence of dilatation occurred in relatively the same ratio in the two groups, so that, at least in the small number of cases that we have examined, the history of a previous pyelitis did not increase the number of dilatations above the ratio that we found when examining a group of normal women.

GROUP 4. PERSISTENCE OF PYURIA AND URINARY SYMPTOMS AFTER DELIVERY

Several patients came under our observation because of pus in the urine, which had failed to disappear after delivery. It is well known that during pregnancy patients may have pus and colon bacilli in the urine without clinical manifestations, and that the urine may rapidly become normal after delivery. Even acute pyelitis tends to a rapid convalescence as soon as the uterus is emptied.

Some of the patients came because of backache or other urinary symptoms, after delivery. In this group of cases we found, without exception, definite evidence of dilatation of the ureter, a picture very plainly demonstrated by ureteropyelograms. It is therefore clearly indicated to submit all patients who present residual urinary symptoms after pregnancy to complete urologic study.

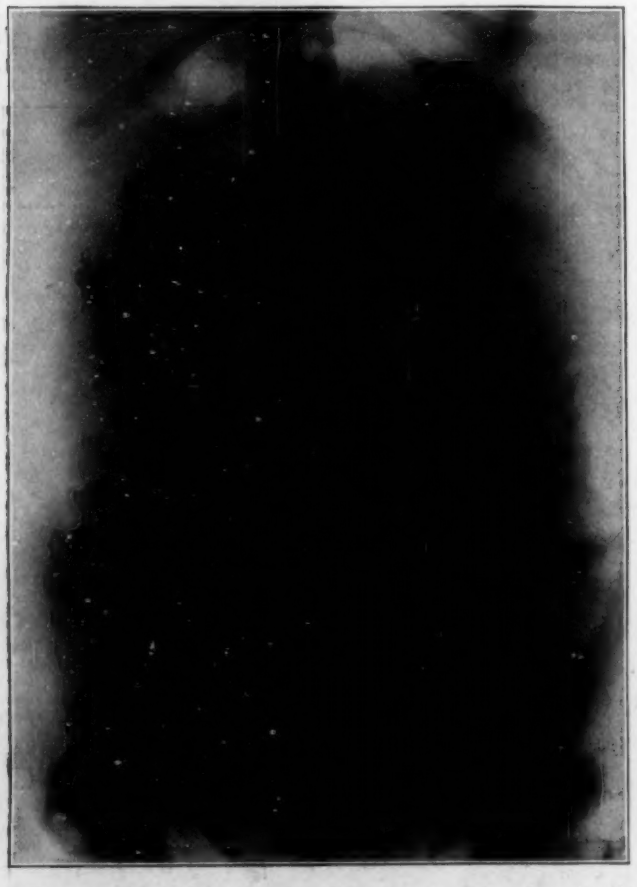

Fig. 10 (Mrs. W.).—Aug. 28, 1924; extensive dilatation of right ureter and right kidney pelvis, with lateral displacement of right ureter.

Repeated pyelography during the course of pregnancy shows the progress of pathologic changes in a given case. In several instances in which the patients were subjected to examination early in pregnancy, a certain amount of dilatation was present in the higher urinary tract. This in some cases was associated with a low lying kidney. Pyelograms several weeks later showed the kidney to be lying at its normal level and that the dilatation had, at least temporarily, disappeared.

In other cases a reversal of conditions was noticed. The dilatation present early in the pregnancy had increased, and as the pregnancy advanced, the hydronephrosis became more marked.

In some of the cases there was a definite displacement of both ureters away from the median line, so that the distance between the two ureters was very markedly increased. This was particularly noticed in the cases in which the dilatation of the ureters was extensive.

In some of the cases the dilatation extended all the way up the ureter from the bladder to the kidney pelvis and was extreme. In others, the dilatation seemed to come to a very abrupt stop at about the brim of the pelvis, below which point the ureters either were slightly dilated or normal. This was particularly marked in cases showing lateral displacement of the ureter.

ABDOMINAL PAIN

Several patients during pregnancy complained of obscure, indefinite and atypical abdominal pain. In two instances a diagnosis had been made of a possible appendicitis. There was no elevation of temperature and there were no urinary findings. These patients were subjected to pyelography. Dilated and kinked ureters were found, as well as hydronephroses.

Our experience leads us to believe that during pregnancy dilated ureters and kidney pelves often provoke pains in the sides and upper abdomen when the urinary tract is not suspected as being the cause of the pain, since the patient is free from fever and has no pus in the urine.

KINKS IN THE URETER

In several cases the ureteropyelogram showed the presence of kinks in the ureter. These were found only when the ureters were moderately or extensively dilated. It is our impression that these kinks are the result and not the cause of the dilatation, since, when pyelograms were made again after delivery, the kinks had disappeared.

Fig. 15 (Mrs. H.).—Dec. 19, 1924; extreme dilatation of right ureter; urine sterile; free of pus.

That dilatation of the kidney pelvis and ureter occurs during pregnancy was known to the older clinicians, who made their observations at necropsy on patients who died from obstetric complications. It is generally not known that dilatation of the upper urinary tract during

pregnancy is as common as our figures demonstrate, particularly that varying degrees of dilatation occur in approximately 80 per cent. of cases of normal pregnancy.

122 South Michigan Avenue.

ABSTRACT OF DISCUSSION

DR. L. R. WHARTON, Baltimore: This paper opens up the question of the etiology of pyelitis and dilatation of the ureter. I have specimens of the urinary tract of seven patients in whom such conditions had been diagnosed clinically. Not all of these patients were women who had been pregnant. In general, we found four distinct types of lesions of the ureter: (1) congenital obstruction of the ureters; (2) obstruction due to pressure of the surrounding tissues, such as scar tissue in the pelvis and broad ligament; (3) obstruction due to trauma of operation; (4) the genuine ureteral infections associated also with infections of the whole urinary tract, the bladder and the kidneys. In pregnant women there is, in addition, hyperemia of the pelvis and of all structures around the ureter plus the abdominal "tumor." I have also been doing some work on women who have been pregnant and had pyelitis during pregnancy. It is my impression that, once a hydronephrosis is formed in these cases, the condition is likely to persist. The question of etiology cannot be settled until we have pathologic studies of the cases that Dr. Kretschmer has been discussing. The difficulty clinically is that the symptoms in these conditions are obscure. Recently I saw a woman who never had any symptoms referable to the bladder. The only pain had been in the left kidney region during menstruation. She carried the baby to term and was delivered normally. She was sent to me a year later because of persistent pain in the left kidney region during the menstrual period—exactly the same pain she had before the baby was born. Going over her history, I found that she had an exacerbation of this pain during the puerperium with a fever of 103 F., but with clear urine. I was surprised to find, on cystoscopic examination, that the left kidney was entirely destroyed and that its capacity was 300 c.c. We interpreted the atrophic kidney as a congenital lesion, because she had exactly the same symptoms throughout her whole menstrual life and because there was never any evidence of infection.

DR. N. SPROAT HEANEY, Chicago: We examined eleven cases of acute pyelitis of pregnancy, and dilatation of the ureter and of the kidney pelvis was present in every case. Frequently it was bilateral, with torsion of the ureter, kinks and lateral displacements. This picture was so unusual that we wondered whether the patient had some difficulty in the way of kink or torsion of the ureter previous to the pregnancy, if the women who have acute pyelitis of pregnancy are those in whom the history reveals a previous pathologic condition. We, therefore, examined nineteen apparently normal pregnant women who had had no previous operations and no history of previous pain or difficulty with the urinary tract, women who had no history of cystitis or anything that could be interpreted as a previous difficulty, women with normal urine at the time they were examined. These nineteen women were studied cystoscopically and by ureteral pyelograms. Four out of every five showed an easily ascertainable dilatation of the ureter and of the kidney pelvis or of the kidney pelvis alone, showing that the picture we found in the acute pyelitis was not due to any congenital difficulty, to any previous stricture of the ureter, but that with practical uniformity in pregnancy there is a dilatation of the ureter and of the kidney pelvis. If we become familiar with this dilatation we, shall find that in some of those patients who have had obscure pain in the abdomen, which we thought was due to the ovary or the uterus or to spasm of the intestine or to a previously undiagnosed gallbladder lesion, the amount of pain is in accordance with the degree of dilatation of the ureter. We are inclined to believe that a good many of the obscure abdominal pains that patients have during pregnancy are attributable to dilatations of the urinary tract.

BERIBERI FROM A DIET OF RAW STARCH *

E. J. KEPLER, M.D.
PHILADELPHIA

Beriberi is seen so infrequently in the United States that its occurrence is worthy of mention. Cases of the disease do occur from time to time, but chiefly among the crews of vessels landing in our ports or among the Orientals. Vedder [1] has shown that the disease has been fairly common in our asylums and penal institutions, and since the publication of his work epidemics in prisons have been reported by both Travis [2] and Livengood.[3] Sporadic cases occur from time to time, but they are exceedingly rare, especially in this part of the country. The probable reason for our fortunate freedom from the disease lies in the fact that even in our lowest social strata the standards of living are sufficiently high to prevent its occurrence.

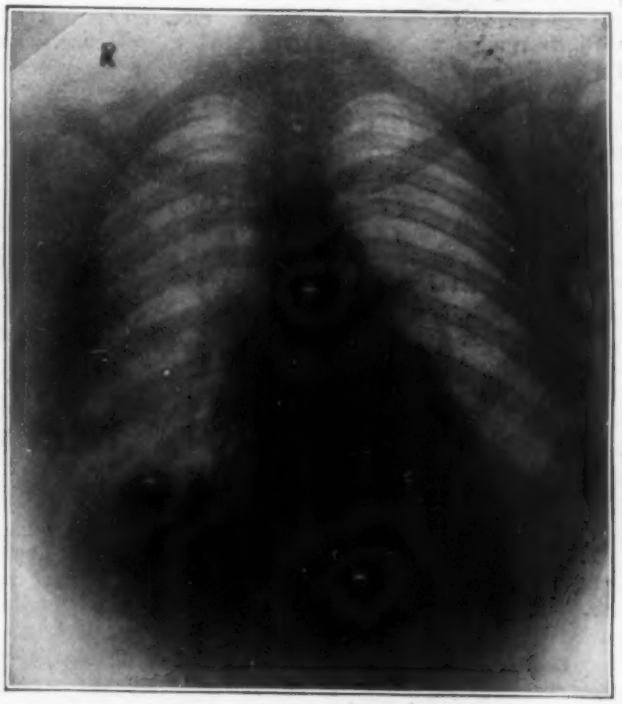

Fig. 1.—Dilatation of both sides of the heart on admission: arch, 5.4 cm.; distance from median line to farthest right border, 5.7 cm.; distance from median line to farthest left border, 9.2 cm.; oblique, 16.3 cm.

The etiology of beriberi is now generally accepted to be a deficiency in the diet of a specific vitamin known as water soluble B. In eastern Asia this deficiency is usually the result of the excessive use of polished rice. On board ship, as Holst [4] has shown, vitamin deficiency results from the too exclusive use of canned foods and white bread. How the absence of the vitamin produces pathologic effects is not fully understood, but it seems likely that the vitamin is necessary for the proper metabolism of carbohydrates. Cooper and Braddon [4] pointed out that in birds a quantitative relationship

* From the Neurologic Service of Dr. W. G. Spiller, Philadelphia General Hospital.

1. Vedder: Beriberi, New York, William Wood & Co., 1913.
2. Travis, F. M.: Beriberi or Endemic Multiple Neuritis, with Twenty-One Cases, Kentucky M. J. **15**: 476-482 (Oct.) 1917.
3. Livengood, H. R.: Beriberi in Union County Jail, J. M. Soc. New Jersey **13**: 395 (Aug.) 1916.
4. Quoted by Walshe: Nelson Loose Leaf Medicine, New York, Thomas Nelson and Sons **3**, 1921.

exists between the amount of carbohydrates eaten and the amount of vitamin necessary to prevent the occurrence of polyneuritis; and Vedder [4] and Clark [4] have shown that if birds are fed on a total beriberi diet for only one week, characteristic microscopic changes appear in the peripheral nerves, whereas birds fed nothing but water live three or four weeks and at the end of that time show no microscopic evidence of neuritis. To make this point clearer, an analogy between beriberi and diabetes might be drawn. In diabetes, a definite amount of carbohydrates must be metabolized to prevent the development of acidosis. To prevent the development of beriberi, a carbohydrate diet must be supplemented with a definite amount of vitamin substance. In other words, the water soluble B vitamin is to carbohydrate metabolism what glucose is to fat metabolism. When the disproportion between the carbohydrate and the vitamin is not great, years may elapse before the onset of symptoms, which even then may be mild in character; but on a total beriberi diet pronounced symptoms occur after about ninety days.[5]

Because of the rarity of the condition, it might be well to review the chief features of the disease. In the fatal cases the pathologic findings are fairly constant and consist, first, in degenerative changes in the entire nervous system but with the greatest involvement of the peripheral nerves; secondly, in dilatation and hypertrophy of the heart with the microscopic evidence of degeneration, such as brown atrophy, edematous infiltration, vacuolation, fatty changes and sometimes even fragmentation and segmentation of muscle; finally, in a generalized tendency to edema and effusions into the serous cavities. The changes in the other organs are not characteristic.

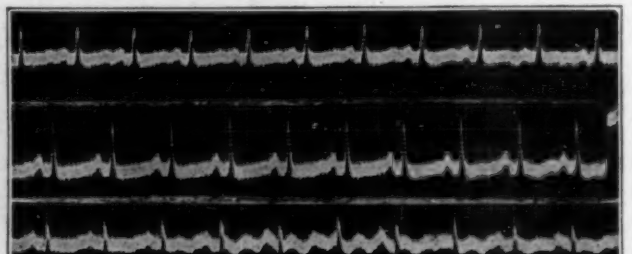

Fig. 2.—Normal conduction time and normal ventricular complexes at time patient was admitted.

The symptoms are determined by the pathologic findings outlined above. In the mild cases the onset is insidious, with weakness, pains, paresthesias and finally paralyses of the extremities. Generally the legs are first affected. Along with the neuritic symptoms, the evidence of myocardial injury becomes apparent and the patient complains of palpitation, dyspnea, and precordial and substernal pain. Slight edema of the feet and ankles may appear. In this stage the disease may remain chronic for many years with slight remissions and exacerbations, but it may become acute at any time with collapse, general anasarca and death. Other cases go on to a chronic neuritis and flaccid paralysis without any edema. An acute form in persons apparently well occurs in which edema and cardiac failure predominate. In these cases death may occur in a few hours, or, if immediate recovery ensues, the disease may go on to the chronic atrophic type indistinguishable from these cases in which the onset has not been so spectacular.

The physical findings are those of a multiple neuritis, with or without edema, and cardiac failure. The heart findings vary greatly. Pulsations in the neck and epigastrium are common. There is practically always an enlargement of the heart to the right and sometimes to the left. The rate is accelerated, and there may be marked arrhythmias. The blood pressure is usually described as being low, but in the twenty-one cases reported by Travis,[2] the systolic readings were uniformly high and the diastolic readings unusually low, the average pulse pressure being 105.

Eye changes occur frequently, as shown by Fernando[6] and others. These include dimness of vision, disturbance of color sense, inconstant hyperemia, blurring of the optic disk and a slight neuroretinitis.

There are no constant laboratory findings. The blood usually shows a secondary anemia and variable changes in the differential picture. The urine is usually diminished in amount, and only occasionally contains albumin. Casts are rare. Few studies in the chemistry of the blood have been made. Arima,[7] in 1917, reported a moderate increase in the nonprotein nitrogen of the blood comparable to that occurring in chronic parenchymatous nephritis.

The prognosis, except in the acute cases in which death is the rule, is generally good. In some epidemics the mortality rate has been above 50 per cent. and in others as low as 3 per cent. Conservative estimates place the average mortality at 5 per cent.[1]

REPORT OF CASE

History.—M. R., a colored woman, aged 28, married seven years, had one child, aged 5 years, and had had two subsequent miscarriages. She was admitted to the Philadelphia General Hospital, Oct. 18, 1924, and assigned to the neurologic service of Dr. Spiller, to whose courtesy I am indebted for the privilege of reporting this case.

Before the onset of the present illness, her health had been good except for influenza in 1918, and occasional mild attacks of tonsillitis. In August, 1918, she had a miscarriage followed by severe vaginal bleeding. One of her friends recommended raw starch as a therapeutic measure. Acting on this advice and later influenced by a superstition among negroes that raw starch has cosmetic value and tends to make the skin white, she gradually acquired a fondness for this type of food, and would eat it from the box, piece by piece, as one would eat candy. At the end of two years this habit had increased to such an extent that she was consuming one of the popular brands of gloss starch in amounts ranging from 1 to 2 pounds (0.5 to 0.9 kg.) daily—approximately from 1,600 to 3,200 calories. Her husband ate only one of his daily meals at home, and rather than cook for herself, she obtained most of her nourishment from the uncooked starch. The cooked meal at night consisted of the usual staple articles of diet found on a working man's table. Under this regimen she lost her appetite, and as a result she practically subsisted on laundry starch, which, so far as its vitamin content is concerned, is certainly the equivalent of decorticated rice. The hold which this habit had obtained on her can be realized from the fact that on several occasions after her admission to the hospital, she asked the nurses to smuggle starch to her. No other peculiarities or excesses in her habits could be discovered. Alcohol was ruled out by repeatedly questioning the patient, her husband and her neighbors.

In spite of her starch diet from August, 1921, she remained in fairly good health until May, 1924, when she began to notice unusual sensations in her hands and feet. She felt as

5. Fraser and Stanton, quoted by Vedder (Footnote 1).

6. Fernando, S.: The Eye in Beriberi, Am. J. Ophth. **6**: 385-389 (May) 1923.

7. Arima, E.: Observations on the Nonprotein Nitrogen Blood Content in Beriberi, China M. J. **31**: 336 (July) 1917.

though pins and needles were being stuck in her extremities and that insects were creeping up and down the legs. At times there was a transient edema of the feet. A little later she began to have a constant dull ache in the calves and severe shooting pains down the legs. At the same time she noticed that her extremities were becoming weak, and that she was short of breath on exertion. By September 1, there was marked edema of the feet, pronounced dyspnea on exertion, and sufficient loss of power in the legs, so that walking became very difficult.

About the middle of September she consulted a physician, who within a period of two weeks gave her six intravenous injections of a yellow solution. This we thought was arsphenamin, but on subsequent investigation we learned that it was a new preparation of calcium containing about 0.1 per cent. of free iodin. Following this treatment she became much worse. Her vision failed rapidly, so that in two weeks she was almost blind. She became drowsy and subject to dizzy spells. She lost all sex desire and at the same time was troubled with an intense pruritus vulvae, both of which symptoms she lamented very bitterly. There were attacks of severe substernal and abdominal pain with loss of appetite, nausea, vomiting, palpitation and dyspnea. There were no urinary disturbances other than that the urine became scanty and highly colored. The remainder of the history was negative.

Examination.—On admission the patient, well developed and overnourished, was retching and vomiting. The temperature was normal, pulse rate 120, and respiratory rate 35. She appeared to be very ill.

The vision of each eye was greatly impaired. She was able to recognize a hand passed before the eyes, but was unable to count the number of fingers held before her. The pupils were round and regular, with only a partial response to light. The fundi showed some pallor of the temporal sides of the disks, full veins, pulsating arteries and several recent retinal hemorrhages lying close to the disks.

The thyroid was slightly enlarged, but not tender. The lungs were normal. The cardiac impulse was diffuse and pounding, so that the left breast shook with each beat. Marked pulsations were observed in the suprasternal notch, over the carotid and temporal arteries, as well as over the abdominal aorta. There were vibratory thrills felt at the base of the heart and in both carotid arteries. The heart was enlarged to the right and to the left, as shown by the teleroentgenogram (Fig. 1). The heart sounds were of a poor quality, the rate accelerated, and the rhythm normal. Three distinct murmurs could be heard. At the apex there was a soft, blowing systolic murmur and at the base to the left a very loud, rough, systolic murmur. In the fourth left interspace both murmurs could be heard and identified. To the right of the sternum in the second interspace there was another soft, blowing, systolic murmur. On repeated examinations no diastolic murmur was heard. Pistol shot sounds were heard in the femoral arteries, but no to and fro murmur. The blood pressure in the arms was 108 systolic and 0 diastolic, and in the legs 180 systolic and 0 diastolic.[8] The electrocardiogram showed normal conduction and a normal form of ventricular complexes (Fig. 2). Tracings of the radial pulse showed a very quick, collapsing pulse suggesting aortic insufficiency (Fig. 3).[9]

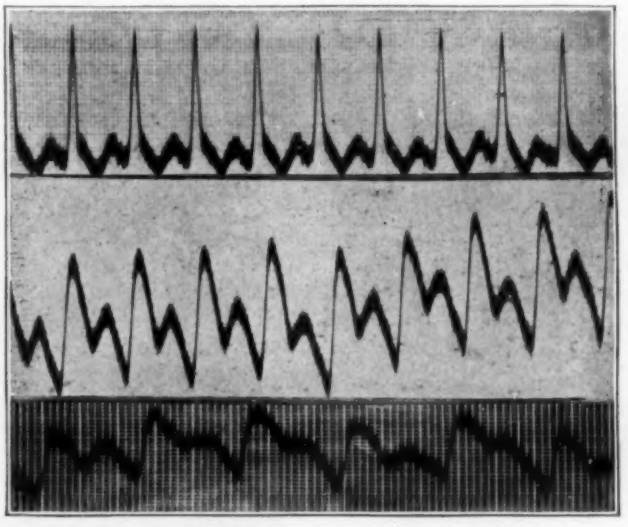

Fig. 3.—Pulse tracings from the radial artery: The top tracing shows the collapsing pulse suggesting aortic insufficiency; beginning of upstroke to peak of primary wave, from 0.06 to 0.065 second; beginning of upstroke to predicrotic summit, 0.12 second, against 0.23 second in normal persons; this tracing should be compared with the middle tracing, which was made when the patient was discharged; the bottom tracing was made at the same time as the middle, but at twice the rate of speed, in order to bring out the time relationships more clearly; both are entirely normal.

The skin of the extremities was dry and scaly. Both hands and feet showed marked loss of power. There was a bilateral foot drop. The hands and feet were extremely sensitive to pressure, and there were patchy areas on the legs over which sensation was diminished. The calves were slightly atrophic. No edema was present over the tibiae, but there was a slight amount over the sacrum. All the tendon reflexes were absent. There was no Babinski reflex. The patient was able to take a few steps by supporting herself, and the gait when so examined seemed to be of the steppage type. The remainder of the examination was negative.

Laboratory Findings.—The blood examination revealed: hemoglobin, 60 per cent.; red blood cells, 3,800,000; leukocytes, 8,400, with 71 per cent. polymorphonuclears, 24 per cent. lymphocytes, 2 per cent. monocytes, and 3 per cent. metamyelocytes; and platelets, 300,000; the bleeding and clotting time were normal. Study of the red cells showed no basophilic stipling or abnormalities in the size and shape of the cells.

The urine examination revealed: acid; specific gravity, 1.022; a light cloud of albumin; no sugar; no acetone; many casts, both hyaline and granular, and many leukocytes and red cells. The benzidin test for blood was positive. There was no tyrosin or leucin present.

The hair was examined for arsenic, but none was found. There was no arsenic, lead or mercury in the urine. The blood culture was sterile. Cultures from the nose and throat showed nothing remarkable. The blood Wassermann reaction was repeatedly negative with cholesterin and Noguchi antigens. The spinal fluid was entirely normal in all respects, including the Wassermann and colloidal gold tests. Cystoscopic examination showed edematous ureteral openings, diminished excretion of urine, and greatly retarded excretion of indigocarmin injected intravenously. The urine was sterile.

Treatment and Course.—On admission, a diagnosis of acute nephritis and multiple neuritis of unknown etiology was made. The nephritis appeared to be more urgent, and treatment consisting of a low protein diet and large doses of the alkaline diuretics was instituted. After about ten days, a diagnosis of beriberi was made. The diet was then modified and autolyzed yeast given. Marked improvement followed. The urine became normal. The heart murmurs gradually disappeared, the blood pressure became normal (124 systolic and 80 diastolic), the pulsations in the peripheral arteries disappeared, and the heart became normal in size (Fig. 4). A pulse tracing

Results of Chemical Examination of the Blood

	10/20	10/27	11/26
Urea nitrogen	20.0	45.0	11.0
Uric acid	6.6	8.0	4.0
Sugar	155.0	180.0	110.0
Creatinin	.....	1.4	.....
Carbon dioxid per 100 c.c.	.....	43 c.c	.....

8. It is realized that the actual diastolic pressure did not drop to zero, but in taking the readings no fourth or fifth phase could be detected.

9. Graphic cardiac studies were made and interpreted by Dr. T. M. McMillan, Philadelphia General Hospital.

taken from the radial artery was entirely normal when the patient was discharged three months after admission (Fig. 3). The peripheral neuritis gradually subsided, and at present the patient is able to walk and is at home doing her own housework.

COMMENT

The diagnosis of beriberi in this patient seems justified because of: (1) the history of a prolonged high carbohydrate diet deficient in vitamins; (2) the clinical picture of peripheral neuritis with myocardial failure—the ordinary causes for these conditions having been eliminated, and (3) the rapid response which the patient made to specific therapy.

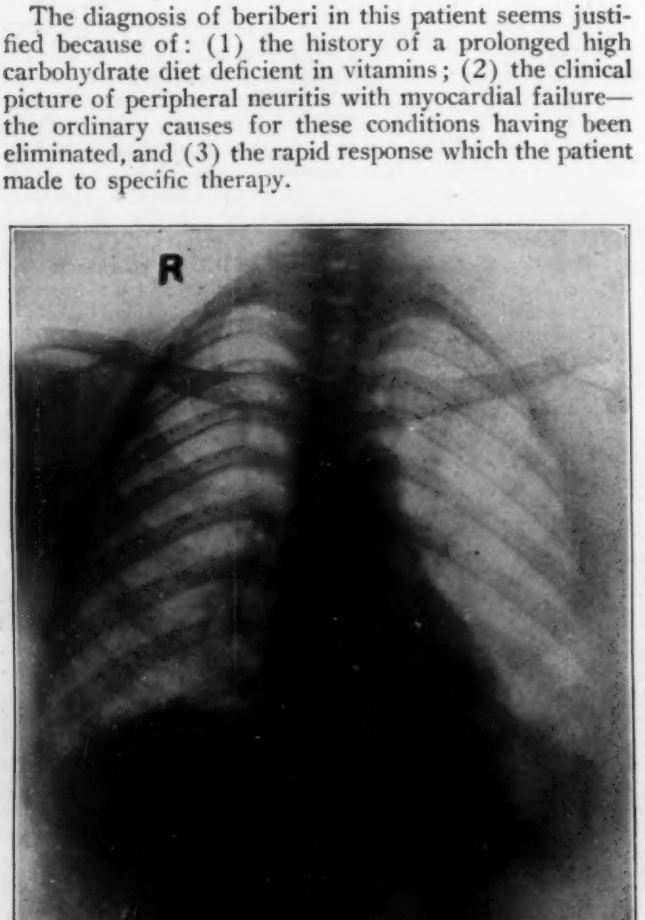

Fig. 4.—Condition when the patient was discharged: arch, 5.4 cm.; distance from median line to farthest right border, 3.9 cm.; distance from median line to farthest left border, 8.2 cm.; oblique, 14 cm.

The nephritis is difficult to explain. Beriberi ordinarily does not produce a nephritis. Whether it occurred as an independent condition or as the result of intravenous medication, it is impossible to say. The possibility of some toxic substance in the starch itself, which could produce both a nephritis and a peripheral neuritis, was carefully considered. However, the analysis of gloss starch given in the textbooks, as well as that submitted by the manufacturers of the particular starch in question, makes this possibility very unlikely.

The peculiar cardiac findings simulating aortic valve disease afford material for much interesting speculation. Vedder has shown that beriberi is a disease of the entire nervous system, and it seems possible that a paralysis of the vasomotor system, in which the heart was pumping blood into relaxed and dilated arterioles, could give the vascular signs presented by the patient. On the other hand, a relative aortic insufficiency might have occurred as a result of the dilatation of the heart, although if this were true it seems as though a diastolic murmur should have been present.

TUBERCULOSIS AFFECTING THE OPTIC CHIASM

WITH SECONDARY OPTIC NERVE ATROPHY AND RETINITIS: DIAGNOSIS AND TREATMENT WITH TUBERCULIN *

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AND
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This case is presented because of the unusual sequence of bilateral inferior altitudinal hemachromatopsia, optic nerve atrophy and retinitis, and also to call attention again to a safe and reliable method of diagnosing a tuberculous lesion affecting the optic nerve.

This patient is an intelligent American, aged 45. When we first saw him, Oct. 30, 1922, he was in good health, carrying on his duties as an executive in a manufacturing concern. He had noticed that his vision had failed a little, and thought that his glasses needed changing. There had been no flashes of light, no flickering, no pain, and no change in his general health.

Examination of his eyes showed: vision of right eye, 20/15; of left eye, last letters down to 20/25. He could see the end of the line better than the beginning, probably owing to the beginning of a scotoma.

Homatropin refraction: R. plus 0.25 sph. plus 0.25 cyl. axis 180 = 20/15 plus 2. L. plus 0.50 sph. = last letters to 20/25.

The eyes were normal externally, including pupillary reactions.

Examination of the fundus revealed both disks pale, especially the left. The retinas were normal.

Perimetric examination revealed bilateral, inferior altitudinal hemachromatopsia, with concentric contraction for form in the left eye and color fields smaller in the left eye than the right.

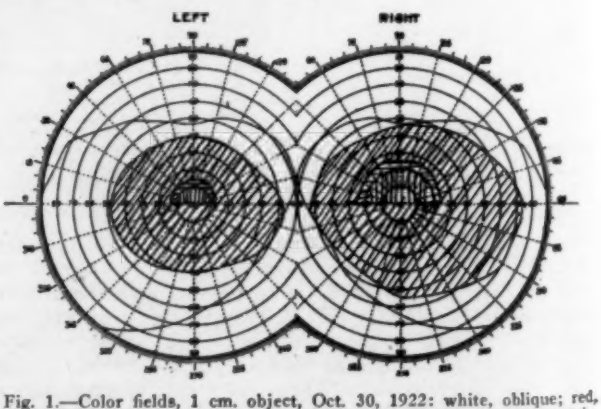

Fig. 1.—Color fields, 1 cm. object, Oct. 30, 1922: white, oblique; red, horizontal; green, vertical: bilateral inferior altitudinal hemachromatopsia.

The diagnosis was bilateral secondary optic atrophy (Fig. 1).

A very thorough general examination was made by the patient's physician, Dr. W. H. German, to determine the etiology. The general physical examination was negative. The blood Wassermann reaction was negative, the urine normal, the blood count, reds, whites, and differential count normal. The roentgen-

* Read before the Section on Ophthalmology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

ray appearance of the region of the sella turcica was normal. Neurologic examination by Dr. Archibald Church gave no clue. As optic atrophy is often syphilitic, and no other treatment seemed advisable, the patient was treated with potassium iodid by mouth and neo-arsphenamin intravenously. The vision gradually grew worse, reaching 20/40 in the left eye, May 23, 1923, seven months after the patient had been first observed. Vision of the right eye remained 20/15 throughout the entire course of the disease. During this time the altitudinal hemachromatopsia had disappeared, and on Jan. 15, 1923, two and one-half months after the first observation, perimetric tests showed the field for the right eye normal, while that of the left eye showed a temporal contraction, especially for colors. This contraction increased and a long narrow paracentral scotoma appeared, reaching from the blind spot almost to the center of fixation (Figs. 2, 3 and 4). May 23, all antisyphilitic treatment was stopped, and we decided to feel our way cautiously with tuberculin. A general physical examination was made again and no contraindications to tuberculin were found, so biweekly injections of tuberculin were started as a therapeutic measure. The initial dose was 0.001 mg.

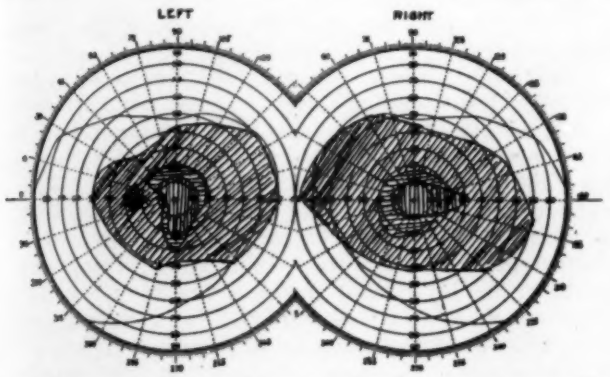

Fig. 2.—Color fields, 1 cm. object, Jan. 15, 1923: temporal contraction for colors, left eye.

of tuberculin T. R. injected subcutaneously in the arm. No reaction, general, focal or local, was observed, and after just a few injections the vision in the left eye was improved, so the dose was increased gradually. Within two months vision in the left eye had improved from the last few letters in 20/40 to the last few letters in 20/15. By this time the patient was receiving 0.02 mg. of tuberculin T. R. at a dose, and was in fine general health. He disappeared for a period of about six weeks, and on his return we were dismayed to find that the vision in his left eye had dropped to 20/50 plus 1, and also to see a very peculiar striking form of retinitis in his left eye (Fig. 5). There were many small, horizontally oval white spots in the retina between the disk and macula, following quite closely the anatomic arrangement of the nerve fibers in that region; i. e., an ellipse. Where these spots coincided with retinal vessels they were superficial to them. There was no pigment change and no hemorrhage. Perimetric and campimetric charts were about the same as before. Injections of tuberculin were started again, and the patient was sent back to his physician for another physical and laboratory examination. This time, as before, the results were negative.

In view of his improvement when treated by tuberculin, and his relapse when he stopped it, we felt confident that the lesion was tuberculous in nature, but we wanted absolute proof. This could be obtained only by a diagnostic injection of an overdose of tuberculin resulting in a focal reaction, made manifest by a reduction in vision.

December 4, 1923, O. T., 1.5 mg., was injected subcutaneously in the arm. The focal reaction was questionable; the loss in vision was only a few letters, not more than the usual variation from day to day;

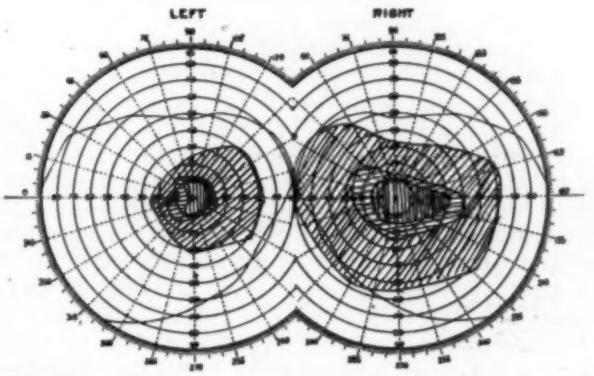

Fig. 3.—Color fields, 1 cm. object, March 14, 1923: more marked concentric contraction for form and colors, left eye.

however, he had more difficulty in reading the letters, and said that his vision did not seem as clear. There was also a feeling of discomfort about the left eye. There was no change in the retinitis. The scotoma was slightly larger. There was no general or local reaction. The case was watched for several days, but no change occurred. December 13, a larger dose was given, O. T., 3 mg. subcutaneously. This produced a decided focal, local and general reaction. Vision dropped from 20/50 to 20/100—1 within twenty-eight hours, the arm was painful at the site of the injection, and there was general malaise, anorexia, backache and a temperature of 100 F. by mouth. No change in the retinitis or in the scotoma was noted. All these symptoms were gone in forty-eight hours, except the vision, which returned to its previous state of 20/50 within one week. This reaction verified our conception of the etiology and also our faith in the harmlessness of this measure as a means of making a positive diagnosis in tuberculous lesions affecting the optic nerve.

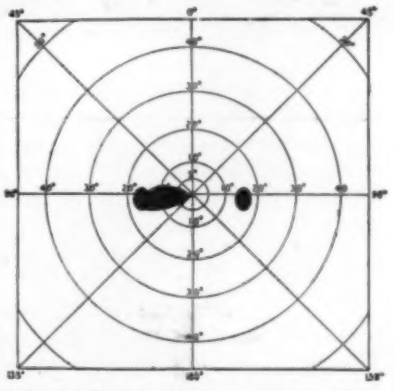

Fig. 4.—May 3, 1923: scotoma, left eye.

The patient was now treated in earnest, and he cooperated very faithfully. The results were gratifying. There was a gradual improvement in vision. Within six months vision in the left eye had improved to 20/25 plus, the scotoma had become smaller, and the retinitis had disappeared, leaving only a few fine pigment spots. Treatment was continued for another nine months in order to avoid a second relapse (Figs. 6 and 7)

We believe that the etiology was established beyond question by the decidedly positive reaction to tuberculin O. T. The site of the lesion cannot be proved so accurately. The occurrence of bilateral, inferior altitudinal hemachromatopsia early in the disease, followed by atrophy of both nerves and permanent damage to the conduction powers of the fibers of the left optic nerve only, speaks strongly for a lesion above the chiasm affecting it superficially, especially toward the left side. Such a lesion would probably be in the meninges. Tuberculous involvement of nerve tissue is usually meningeal, and the damage to the nerve tissue that occurs comes about by infiltration of toxic material from the meningeal focus, by pressure or by growth into the nerve tissue. In this case, if the lesion had been located in the chiasm itself there would in all probability have been more permanent damage to the conduction power, with more loss of vision. It seems reasonable to suppose that the tuberculous focus was in the meninges, and that the disturbance in vision was due to the action of tuberculous toxin on the nerve fibers. The type of retinitis also lends support to this hypothesis in that it was apparently due to some irritating substance spreading out along the course of

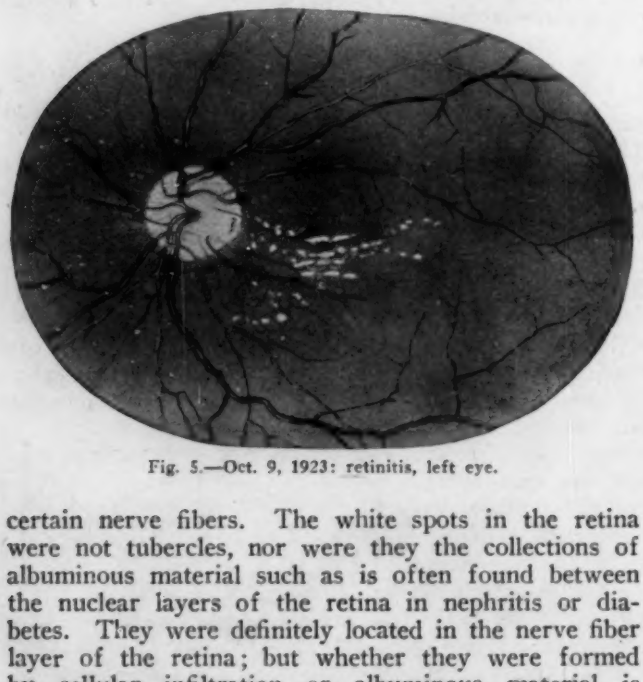

Fig. 5.—Oct. 9, 1923: retinitis, left eye.

certain nerve fibers. The white spots in the retina were not tubercles, nor were they the collections of albuminous material such as is often found between the nuclear layers of the retina in nephritis or diabetes. They were definitely located in the nerve fiber layer of the retina; but whether they were formed by cellular infiltration or albuminous material is impossible to say.

The use of tuberculin is, of course, not new. It has been tried and has been discarded by a majority of physicians for most forms of tuberculosis. Its dangers have dominated the minds of the profession to such an extent that its real usefulness has largely been lost. In addition, its specific action has been questioned by investigators because of the more recent observations in the nonspecific protein reactions.

It is in lesions of the anterior segment of the eye that tuberculin is most often used, in iritis, scleritis, sclerosing keratitis, etc. Here the lesion can be easily observed. By use of the loupe or corneal microscope, slight changes can be made out. We do not fear the dangers of tuberculin in these cases: a little swelling, a small hemorrhage or a slight increase in sclerosis does little damage. But in lesions of the posterior half of the eye and of the nerve, ophthalmologists, as a rule, are so mindful of the dangers that they are afraid to clinch their diagnosis by giving a diagnostic dose large enough to cause a focal reaction. It is our belief that the focal reaction resulting from the use of a proper dose of tuberculin O. T. is temporary and free from danger, and that it is essential to the diagnosis of tuberculous lesions of the optic nerve. There is nothing characteristic in the appearance of a tuberculous optic neuritis; the diagnosis can be made only by obtaining a positive focal reaction with tuberculin, and the most valuable sign in the focal reaction is temporary loss of vision. In fact, reduction in sight may be the only evidence of the focal reaction. It was the only evidence in this case and was the only evidence in two cases already reported by one of us.[1]

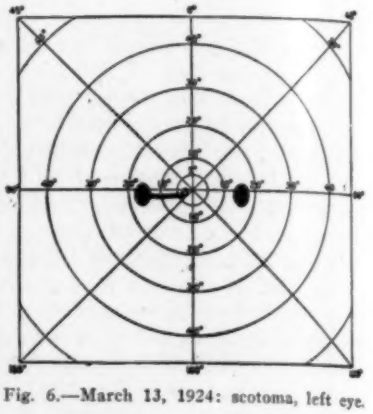

Fig. 6.—March 13, 1924: scotoma, left eye.

The first of these also involved the chiasm, but clinically there was papillitis. There was, however, no retinal involvement at any time. An injection of 4 mg. of tuberculin O. T. was followed in seventeen hours by a drop in vision from 20/40 to 20/100, without any change in the appearance of the disk. In four days, vision had returned to 20/40. Subsequent treatment with tuberculin T. R. resulted in vision of 20/15, though the disk has remained dead white to date. The second case was clinically an optic neuritis, though later in its course a typical star shaped mass of exudate appeared in the macular region, giving the appearance of an albuminuric retinitis. In this case an injection of 2.5 mg. of tuberculin O. T. caused a reduction in vision from 20/20 to 20/200 in forty-eight hours. In this case the vision did not return to normal until twenty-one days had

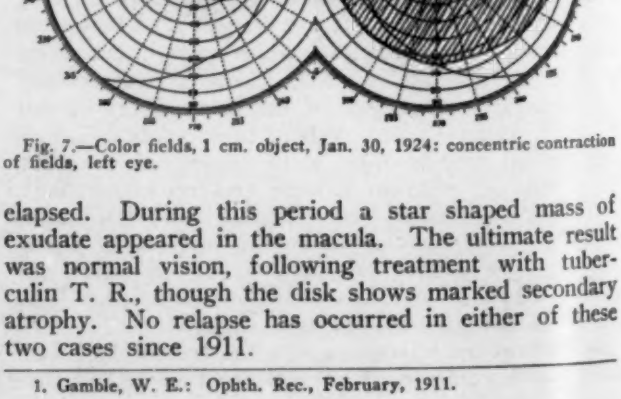

Fig. 7.—Color fields, 1 cm. object, Jan. 30, 1924: concentric contraction of fields, left eye.

elapsed. During this period a star shaped mass of exudate appeared in the macula. The ultimate result was normal vision, following treatment with tuberculin T. R., though the disk shows marked secondary atrophy. No relapse has occurred in either of these two cases since 1911.

1. Gamble, W. E.: Ophth. Rec., February, 1911.

In these three cases of retrobulbar neuritis we find that the sight reduction test is the essence of the focal reaction; we find that the focal reaction is safe, and that improvement follows the use of small doses of tuberculin T. R.

It is true that in two of these cases retinitis appeared following the use of tuberculin. In one it appeared several weeks after a focal reaction from 2.5 mg. of tuberculin O. T. In the other it came on after a long course of therapeutic injections of tuberculin T. R., but after a rest period of about a month, and before the focal reaction was used. In both cases it disappeared while tuberculin was being used. The other patient had no retinitis, although a focal reaction from 4 mg. of tuberculin O. T. was elicited.

The excellent results obtained by the use of various foreign proteins in certain types of inflammation in the eye has to some extent questioned the specific action of tuberculin on a tuberculous focus. There is nothing specific about the action of milk or typhoid vaccine on gonorrheal conjunctivitis, or on a postoperative inflammation; but there is often a marked improvement. There are, however, fundamental differences between the use and action of tuberculin and

Progress Record

Date	Vision	Treatment	Comment
10/20/22	R., 20/15 L., last letter to 20/25	.....	Disks pale, especially left; bilateral inferior hemachromatopsia
1/15/23	R., 20/15 L., 20/30	.....	Fields: R., normal; L., temporal contraction, especially for colors
3/14/23	R., 20/20 + L., 20/25	.....	Fields: R., normal; L., contraction greater
5/ 3/23	R., 20/15 + 3 L., last letter to 20/40	.....	Fields: R., normal; L., contraction less, but paracentral scotoma from disk to blind spot
5/23/23	.....	T. R. 0.001 mg. subcutan.	No reaction
5/26/23	.....	T. R. 0.001 mg.	No reaction
5/31/23	R., 20/15 L., last letter to 20/25	T. R. 0.001 mg.	No reaction
6/ 5/23	.....	T. R. 0.002 mg.	No reaction
6/ 8/23	.....	T. R. 0.003 mg.	No reaction
6/12/23	.....	T. R. 0.003 mg.	No reaction
6/15/23	.....	T. R. 0.004 mg.	No reaction
6/19/23	L., last three letters in 20/25	T. R. 0.006 mg.	No reaction
6/23/23	.....	T. R. 0.009 mg.	No reaction
6/26/23	.....	T. R. 0.01 mg.	No reaction
6/29/23	L., last three letters in 20/20	T. R. 0.01 mg.	Scotoma smaller
7/ 3/23	.....	T. R. 0.01 mg.	
7/ 6/23	.....	T. R. 0.01 mg.	
7/ 9/23	.....	T. R. 0.01 mg	
7/13/23	.....	T. R. 0.01 mg.	
7/17/23	.....	T. R. 0.01 mg.	
7/20/23	.....	T. R. 0.02 mg.	
7/24/23	.....	T. R. 0.02 mg.	
8/ 9/23	L., last three letters to 20/15	T. R. 0.02 mg.	
8/16/23	.....	T. R. 0.02 mg.	
8/24/23	.....	T. R. 0.02 mg.	
10/ 9/23	L., 20/50 + 1	.....	Retinitis, L. eye; many small white oval spots between disk and macula
10/16/23	L., 20/50—2	T. R. 0.02 mg.	
11/22/23	L., 20/100	T. R. 0.02 mg.	
11/26/23	L., 20/70	T. R. 0.02 mg.	
11/30/23	L., 20/50 + 2	T. R. 0.02 mg.	
12/ 4/23 2 p.m.	L., 20/50 + 1	O. T. 1.5 mg.	Temperature normal
12/ 5/23 10 a.m.	L., 20/50 + 1 with difficulty	.....	Patient feels that vision is worse; discomfort about left eye; scotoma the same; no fever, malaise or anorexia; fundus the same
1 p.m.	L., 20/50 — 1	.....	More difficulty in reading letters; scotoma broader
6 p.m.	L., 20/50 + 2		
12/ 6/23	L., 20/50 + 1		
12/13/23 1 p.m.	L., 20/50 + 1	O. T. 3 mg.	
12/14/23 1 p.m.	L., 20/100	.....	Arm sore; no areola; general malaise; backache; no fever; no appetite; scotoma unchanged
5 p.m.	L., 20/100 — 1	.....	Temperature 100 F. by mouth

Progress Record—Continued

Date	Vision	Treatment	Comment
12/15/23	L., 20/70	.....	Feels better; scotoma unchanged
12/21/23	L., 20/50	T. R. 0.02 mg.	Weight 143½ pounds (65 kg.)
12/26/23	L., 20/50 + 2	T. R. 0.02 mg.	
12/31/23	.....	T. R. 0.02 mg.	
1/ 5/24	L., 20/50	T. R. 0.02 mg.	
1/ 9/24	L., 20/50	T. R. 0.02 mg.	
1/16/24	L., 20/50	T. R. 0.02 mg.	Weight, 146 pounds (66.2 kg.)
1/23/24	L., 20/50 + 2	T. R. 1/30 mg.	Weight, 147 pounds (66.7 kg.)
1/27/24	L., 20/50 + 2	T. R. 1/30 mg.	
1/31/24	L., 20/50	T. R. 1/30 mg.	
2/ 5/24	L., 20/50	T. R. 1/30 mg.	
2/11/24	L., 20/30 — 1	T. R. 1/30 mg.	
2/16/24	L., 20/50 + 1	T. R. 1/30 mg.	Weight, 146 pounds (66.2 kg.)
2/20/24	L., 20/50	T. R. 1/30 mg.	
2/26/24	L., 20/50	T. R. 1/30 mg.	
3/ 3/24	L., 20/40 + 2	T. R. 1/30 mg.	
3/10/24	L., 20/50	T. R. 1/30 mg.	
3/13/24	L., 20/40	T. R. 1/30 mg.	Weight, 148 pounds (67.1 kg.)
3/17/24	L., 20/30	T. R. 1/30 mg.	
3/21/24	L., 20/40 + 2	T. R. 1/30 mg.	
3/25/24	L., 20/40	T. R. 1/30 mg.	
3/28/24	L., 20/30 — 3	T. R. 1/30 mg.	
3/31/24	L., 20/40 + 1	T. R. 1/30 mg.	
4/ 4/24	L., 20/40 + 1	T. R. 1/30 mg.	
4/14/24	L., 20/30 — 2	T. R. 1/30 mg.	
4/17/24	L., 20/30 — 3	T. R. 1/30 mg.	Retinitis almost gone
4/22/24	L., 20/40	T. R. 1/30 mg.	
4/25/24	L., 20/30 — 2	T. R. 1/30 mg.	
4/29/24	L., 20/30 + 1	T. R. 1/30 mg.	
5/ 2/24	L., 20/30 + 4	T. R. 1/30 mg.	
5/ 6/24	L., 20/25 — 3	T. R. 1/30 mg.	Retinitis gone
5/ 9/24	L., 20/30	T. R. 1/30 mg.	
5/13/24	L., 20/30	T. R. 1/30 mg.	
5/16/24	L., 20/30 + 3	T. R. 1/30 mg.	
5/20/24	L., 20/30 + 2	T. R. 1/30 mg.	
5/23/24	L., 20/30 + 4	T. R. 1/30 mg.	
5/27/24	L., 20/30 + 4	T. R. 1/30 mg.	
6/ 2/24	L., 20/30 + 2	T. R. 1/30 mg.	
6/ 5/24	L., 20/25 — 1	T. R. 1/30 mg.	
6/10/24	L., 20/30 +	T. R. 1/30 mg.	
6/16/24	L., 20/25 — 3	T. R. 1/30 mg.	
6/20/24	L., 20/30 +	T. R. 1/30 mg.	
6/23/24	L., 20/30 +	T. R. 1/30 mg.	
6/26/24	L., 20/25 + 2	T. R. 1/30 mg.	
7/ 1/24	L., 20/25 + 2	T. R. 1/30 mg.	
7/ 8/24	L., 20/25 + 4	T. R. 1/30 mg.	
7/11/24	L., 20/25 + 3	T. R. 1/30 mg.	
7/15/24	L., 20/25 + 2	T. R. 1/30 mg.	Treatment stopped; patient under observation
8/21/24	L., 20/25		
9/30/24	L., 20/40		
10/ 3/24	L., 20/25	T. R. 1/30 mg.	Treatment continued for safety
10/22/24	L., 20/25 + 2	T. R. 1/30 mg.	
12/ 3/24	L., 20/30 + 1	T. R. 1/30 mg.	Scotoma still present
12/ 8/24	L., 20/30	T. R. 1/30 mg.	
12/16/24	L., 20/30 + 1	T. R. 1/30 mg.	
12/22/24	L., 20/25 — 1	T. R. 1/30 mg.	
12/31/24	L., 20/25 + 2	T. R. 1/30 mg.	
1/ 3/25	L., 20/25 + 2	T. R. 1/30 mg.	
1/ 7/25	L., 20/25	T. R. 1/30 mg.	
1/13/25	L., 20/25 + 2	T. R. 1/30 mg.	
1/20/25	L., 20/25	T. R. 1/30 mg.	Fields: R., normal; L., marked concentric contraction for form and colors, especially temporal; scotoma still present

of a nonspecific foreign protein. Tuberculin is capable of producing a very marked reaction on a tuberculous focus, even though a very small dose is used. It produces no reaction whatever on nontuberculous soil, in any ordinary dosage. On the other hand, milk or dead typhoid organisms must be used in much larger amounts to produce a reaction; then they produce a reaction in any one. Many different types of acute inflammation in the eye are benefited, but tuberculous lesions are not. It is believed that the value of a milk injection, for example, lies in the leukocytosis and febrile reaction that it causes, while the value of a tuberculin injection lies in an increase in fibrosis resulting from long continued low grade inflammation in the tuberculous focus. Even in the cases in which massive doses of tuberculin O. T. are used in large conglomerate tubercles of the eye with the intent to get repeated focal reactions, the action is still a specific one. This form of treatment is one of last resort, and is not approved of by many; yet it does produce good results in many cases, results that are not obtained by any dose of milk or bacterial protein other than tubercle bacilli.

30 North Michigan Avenue.

ABSTRACT OF DISCUSSION

DR. MALCOLM C. ROSE, New York: The definite dose report given is very important. I prefer thinking dosage in cubic centimenters, thus avoiding the complicated mathematical problem of converting milligrams into cubic centimeters and enabling one to measure the dose in the syringe graduated in cubic centimeters. This affords a big loophole for mistakes, and if we give too large a dose we have a large focal reaction, and large focal reactions may leave permanent changes in the cornea and macula. They also make the patient so sensitive to the increasing tuberculin dosage, that we have to reduce the dose and thus lose valuable time with treatment, through no fault of tuberculin, but because of mistakes in calculation. Accurate control of dosage makes treatment with tuberculin a pleasure. The authors say that this form of treatment is one of last resort. Why last resort? To use tuberculin as a last resort often ends in tragedy, when if used early it would save many eyes, which are lost or seriously damaged by watchful waiting. If tuberculin is used with knowledge and judgment, there are no contraindications for its use in any ordinary tuberculous complication. Unless an operation on a tuberculous patient is an emergency one, the end-results will be far more satisfactory and better healing will be obtained if we wait to operate until after a thorough course of tuberculin has been given. Eyes will be saved that are now lost.

Why does the interpretation of the reading of the tuberculin positive reaction differ so much according to the surroundings in which it is found?

Why is a positive tuberculin reaction with nondemonstrable lesions in cattle so serious that they must be killed, and in the human family a positive tuberculin reaction with nondemonstrable tuberculous lesions so often considered of no real importance? I believe the day is coming when we shall feel that it is just as necessary in diagnosing chronic eye cases to make a tuberculin test as it is to make a Wassermann test. Tuberculin has not been discarded except by the careless or through relegating the work to an untrained assistant. Thus, the director has no foundation on which to base his judgment as to the increasing or diminishing of his dosage, and it is a blessing to all concerned that the careless, because of their bad results, have to stop using tuberculin.

DR. HARRY A. SMITH, Delta, Colo.: I did not hear mentioned the importance of the temperature curve in the diagnosis of ocular tuberculosis. In case of doubt, considering the naturally delicate structures of the eye, one should take the temperature curve carefully over a period of two or three weeks. This will often lead to a diagnosis of ocular tuberculosis when no other tuberculous foci are demonstrated.

DR. T. B. HOLLOWAY, Philadelphia: Something should be said in regard to the possible indiscriminate use of tuberculin. Not that I am opposed to the use of tuberculin, because I do use it; but I do think it is worth while calling attention to the very interesting paper by Dr. Luedde. He based his observations on his own experience and on an elaborate questionnaire investigation among many of the laboratory men of this country. After analyzing his results, Dr. Luedde stated in no uncertain terms that the presence of a focal reaction in cases of intra-ocular tuberculosis pointed strongly to a tuberculous process, but not positively. I question very much whether all of us will accept the definite statement that, in all cases of this kind in which a positive reaction is obtained, the process is necessarily tuberculous.

DR. EDWARD JACKSON, Denver: Just a word to supplement what Dr. Smith said about the temperature curves. I was reminded of it by a patient who has been seen by members of the section, who are all agreed that the condition is a tuberculous one. She has taken her temperature over considerable periods, many times, and she says that in the last ten years her temperature has scarcely been above normal. It was elevated a fraction of a degree recently. Until that time, sometimes in twenty-four hours it fell distinctly below normal. She has often had more than a degree rise or fall of temperature, although the maximum was not above normal.

DR. WILLIAM E. GAMBLE, Chicago: Regarding Dr. Holloway's doubts whether if we had a case in which we had a focal reaction there would be some question whether it was tuberculosis, we tested with tuberculin all cases in which the etiology of the optic neuritis was obscure. We have never had any reaction in any of the cases we have tested except the three mentioned. I think it will occur (I am talking about tuberculosis of the optic nerve); that a slight reaction will occur in a large percentage of cases that have tuberculosis in this region. I say a large percentage of cases, because in tuberculosis of the eye, even in ulcerated tuberculosis, or in the nodular tuberculosis of the iris we do not always get a focal reaction, so I say it is possible that there may be a slight reaction in cases of tuberculosis of the optic nerve, but then it is definite. Tuberculin does not give any reaction in any other disease except tuberculosis. So that his point is not well taken. Dr. Rose asks why we do not increase the dose. We begin at about 0.001 mg. and increase to about 0.3 mg. Of course, a delicate test would be the temperature curve, but we do not want any increase in temperature. That is the thing we avoid. A more delicate test is the well being of the patient. If the patient is increasing in weight and feels well, we feel satisfied that we are below the toxic dose. Why do we want to keep below the toxic dose? It is well known that on the injection of tuberculin into guinea-pigs that have been infected before the injection, the blood stream is negative, and after the injection the blood stream has bacilli in it. We do not want to distribute the bacilli. That is the danger, so we should keep below the toxic effect.

MERALGIA PARAESTHETICA

ITS RELATION TO OSTEARTHRITIS OF THE SPINAL VERTEBRAE *

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It is with considerable reluctance that I venture to speak of so commonplace a topic as meralgia paraesthetica. The subject, however, is not without its clinical and academic interest and merits extended discussion in view of the vague causes that have been assigned as being responsible for the so-called meralgic syndrome.

From a clinical point of view, in particular, the subject deserves serious consideration since a considerable number of patients with meralgia paraesthetica are constantly coming under observation and are appealing for relief from their distressing symptoms. Definitely to establish the etiology of this disturbance—which up to the present apparently has not been done—will in a great measure serve as a basis for rational therapeutic measures. It is with this purpose in view that the clinical aspects of the affection and its etiologic relationship to ostearthritis of the spinal vertebrae—which I have ventured to establish—have been studied.

Originally described by Bernhardt [1] and Roth [2] in independent communications and referred to in German literature as "die Bernhardt-Rothschen Krankheit," this affection has always aroused considerable attention and interest, as evidenced by continued case reports and papers on the subject since the date of its first publica-

* From the Division of Neurology, Hospital for Joint Diseases.

* Read before the Section on Nervous and Mental Diseases at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

1. Bernhardt, M.: Ueber isoliert im Gebiete des Nervus cutaneus femoris externus vorkommende Parasthesien, Neurol. Centralbl., 1895, pp. 242-244.

2. Roth, W. K.: Meralgia paraesthetica, Berlin, S. Karger, 1895.

tion in 1895. As an indication of the attention which the subject aroused, it may be of interest to note that five years after the date of Bernhardt and Roth's communications, Schlesinger,[3] in the preparation of his paper, was able to abstract fifty-six articles (which analyzed 122 cases) from the literature on meralgia paraesthetica. These were principally in French and German, and included an excellent summary of the subject by Musser and Sailer [4] of this country.

Clinically, the affection known as meralgia paraesthetica may be described according to Gordon Holmes [5] somewhat as follows:

> It is characterized by paresthesia and pain, usually with slight objective disturbance of sensation in the region supplied by the external cutaneous nerve on the front and outer side of the thigh. The symptoms vary greatly in intensity in different cases. The most common complaint is of abnormal sensations, of numbness, coldness or tingling on the front and outer surface of the thigh. In other cases pain is the chief symptom.

All authors who have written on the subject have quite uniformly agreed on the clinical manifestations as described by Gordon Holmes, with this possible exception: They have not included the anterior aspect of the thigh in the meralgic disturbance. All have stressed the point that it is the outer aspect of the thigh that is invariably involved. My own observations in the cases studied fully corroborate this fact. That the location of the pain or paresthesia is only of academic interest will be shown later if I may ask you to regard meralgia paraesthetica as the expression of a radicular syndrome secondary to ostearthritis of the spine, and not as a distinct clinical entity in the nature of a peripheral nerve affection—as it is regarded by all writers on the subject.

In the introductory paragraph, mention was made of the vague causes that have been assigned as being responsible for the development of meralgia. Among these may be mentioned trauma, infections, syphilis, alcoholism, pregnancy and static foot disturbances.

All writers on the subject stress the fact that the long course of the external cutaneous nerve in the fascia lata predisposes it particularly to traumatic influences and to a less extent infections, etc. While the latter explanation sounds plausible enough, a more critical analysis obviously fails to impress one with the truth of such an assertion. Various important nerve trunks either pierce, are embedded in or are overlapped by muscular bundles and fascial planes that are in constant physiologic activity, and phenomena comparable to meralgia paraesthetica are never in evidence.

We must therefore seek a more logical explanation for the meralgic phenomena. To consider these phenomena in the nature of radicular irritation having their source in vertebral disease will to a large extent dispel the vague generalizations that have been made with regard to the affection.

Viewing the phenomena in this light, we can then regard the external cutaneous nerve as one of the peripheral prolongations of the second and third lumbar roots. Irritation of these roots as the result of a spondylitic process (which is the only condition under consideration in this study) will obviously produce paresthesias of a painful type on the antero-external aspect of the thigh. It is also readily apparent that to regard meralgia paraesthetica as a distinct clinical entity would be to disregard totally the etiologic factors involved, since it is obvious that meralgia may only be the local expression of a general ostearthritic process. That this is actually so has been demonstrated in a series of twenty-five cases studied in collaboration with Drs. Jahss and Stein of the orthopedic division of the Hospital for Joint Diseases.

In the series studied, it was found that meralgia paraesthetica affected the two sexes to an equal degree. It was rare below the age of 30 (only one case in this series) but was quite common between the ages of 35 and 65—obviously the period when ostearthritic processes are most active.

While the affection was unilateral in approximately half of the cases and bilateral in the rest, close questioning elicited the fact that those patients who had persistent unilateral symptoms also had vague intermittent discomfort on the opposite side.

If we are correct in our assumption that meralgia is a root symptom pure and simple, and not a peripheral nerve disturbance, involvement of the second and third lumbar roots would not necessarily be limited to external cutaneous nerve phenomena alone, since other nerve structures of a sensorimotor type, viz., anterior crural and genitocrural, have their origin in part also from these roots. This anatomic fact received corroboration in the clinical manifestations of pain and paresthesia in the anterior aspect and root of the thigh. This was observed in one third of the cases in association with meralgia. It might be of interest to note here that Lasarew [6] described this condition as an isolated variant and termed it meralgia paraesthetica anterior. He did not, of course, suspect the radicular nature of the disturbance which I have postulated as previously indicated.

In association with the meralgia that was the presenting complaint, a number of patients in this series also showed involvement of the lower lumbar and sacral roots, which gave rise to sciatic type of pain.

While meralgic types may occur in the distribution of the cervical roots, they are relatively not as common as the lumbar root forms. This may be explained by the fact that the lumbar articulations are physiologically the most active and that they are the first and most common to succumb to ostearthritic changes.

The subjective phenomena in cases of meralgia vary with each individual. Some complain bitterly of the hyperesthesia, and some of pain; others have combinations of the two, the disturbance obviously depending on the amount of root involvement and the patient's emotional reaction. Objectively, most of the cases showed hyperesthesia of a disagreeable type. Hypesthesia was unusual, contrary to the observations of numerous writers on the subject.

All the patients in this series were subjected to careful orthopedic laboratory and roentgen-ray examinations. The orthopedic phases will be considered first. In practically the entire group there was positive clinical evidence of involvement of the lumbar spine; immobility, rigidity, muscular spasm, obliteration of the lumbar hollow, percussion tenderness and scoliotic manifestations were present in varying degrees.

In none of the cases studied was there clinical or serologic evidence of syphilis, and it might be opportune at this point to say that there was no other discoverable cause for the meralgia except the arthritic process in the vertebrae. I am also not unmindful of the fact that meralgia paraesthetica may be the initial expression of

3. Schlesinger, Herman: Die Meralgia paraesthetica, Centralbl. f. d. Grenzgeb. d. Med. u. Chir. **3**: 241, 1900.
4. Musser and Sailer: J. Nerv. & Ment. Dis. **27**: 16, 1900.
5. Holmes, Gordon, in Osler's System of Medicine, 1910, pp. 490-491.
6. Lasarew: Deutsch. Ztschr. f. Nervenh. **34**: 154, 1908.

pathologic processes in the central nervous system. Thus, Baccelli [7] reports a case in tabes dorsalis, Bernhardt [1] in hematomyelia, and Sabrazes [8] in dementia paralytica. These cases, however, are not under discussion; and differentiation from the types that form the basis of this paper should cause no difficulties.

The final and most convincing proof of the relationship between meralgia paraesthetica and ostearthritis of the spine has been furnished by the roentgen ray. In practically the entire group of patients there was definite roentgen-ray evidence of an ostearthritic process.

This varied from very mild to advanced degrees of "hypertrophic nonspecific infectious arthritis of the intralumbar articulations, with lipping and overgrowth of the margins of the articular surfaces." The interpretations were made by Dr. N. B. Philips of the roentgenologic division of the hospital, whose cooperation was of great value. Mention might be made here that a number of cases of meralgia not included in this series were negative from a roentgenologic point of view. They showed clinical evidences of spondylitis, however, and it was assumed that the changes were too early to show on the plate or that the process was limited to the intervertebral foramina.

CONCLUSION

In the light of the foregoing facts, the conception that meralgia paraesthetica is a peripheral nerve disease, due to trauma, infections, static foot disturbances or other vague disturbances must be abandoned. A study of twenty-five cases revealed the fact that this affection is radicular in nature and the result of irritation or compression in the intervertebral spaces or foramina.

That this irritation or compression can be attributed to an ostearthritic process in the vertebrae was confirmed by clinical and roentgen-ray evidence. While the matter of treatment has not been under consideration, it obviously suggests itself as directing our therapeutic efforts toward the cause and not the effects of the affection.

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ABSTRACT OF DISCUSSION

DR. I. S. WECHSLER, New York: The point of view which Dr. Rosenheck brings forward is quite at variance with the opinion expressed by all observers. There are a number of things against the conception, much as I like it personally. It furnishes, perhaps, a clearer conception of the pathology underlying the mechanism of the meralgia, but all the cases that I have seen and all those that are reported, are essentially peripheral in nature, and it is difficult to conceive how a radicular process will single out just one branch, a nerve which is essentially cutaneous in nature, which has no motor function, and leave out all the other nerves that come from the same roots. It is equally difficult to conceive of a spondylitic process so limited and so selective as to affect only a few fibers of the second, third and fourth lumbar roots and leave the obturator nerve and the anterior crural untouched. Again, the sensory disturbances are not radicular, but are limited to the upper, outer part of the thigh; nor are there any atrophies in meralgia. But, as I said, it is a plausible conception and furnishes an additional pathologic explanation to those hitherto given.

DR. CHARLES ROSENHECK, New York: I have been very much troubled by the same thing that Dr. Wechsler spoke about, as to why this so-called meralgia should pick out one nerve; but I think, as I brought out in my paper, that one rarely sees a pure meralgia or a so-called meralgia paraesthetica that is limited to the external cutanous area without involvement of some of the other roots. That is, if one questions the patient very closely, one will find that he has discomfort either in the anterior aspect of the thigh or the opposite side or in the genitocrural division. While that may not answer Dr. Wechsler's question, it is the best one I can offer at present.

Another thing: the external cutaneous nerve has a very long course. After leaving the pelvis, it comes into the thigh between the superior and inferior iliac spines and has a rather long course in the fascia lata, and it is possible that that may in itself determine the meralgic nature of the involvement. I am quite sure that the evidence I put forth in my paper should convice almost any one. It was obvious to me for a long time that the heretofore accepted conception of meralgia paraesthetica would have to be revised. It seemed so apparent and the matter was so simple that I felt there was no other explanation for the meralgia. The clinical and the roentgenologic evidence clinched the matter to my mind very clearly that we are dealing with a primary osteoarthritic process with secondary root involvement.

7. Baccelli: Meralgia Parestetica e. Tabe Dorsali, Acad. di Medicina di Genova, May, 1897.
8. Sabrazes: Dementia paralytica: meralgia parasthesique, Rev. de Méd., 1897.

A SIMPLE METHOD OF CAUTERIZATION OF THE CERVIX*

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While lesions of the cervix are regarded as of minor importance, they are such common precursors of more serious conditions that their successful treatment cannot be too greatly stressed. In spite of the fact that attention has recently been called to the effect of the cautery on cervical lesions, it seems that a majority of physicians are still treating by topical applications, douches and packs, and, obtaining no results, are either advising operative procedures, or are disregarding the pathologic condition entirely, if it is causing no discharge.

That the operative treatment is no longer the method of choice may be seen by the statement of Howard Kelley, who says: "The one method of treatment is the actual cautery. With this process available, I but rarely operate any more for lacerations of the cervix."

Lacerations, erosions of the cervix, and endocervicitis are closely allied, and their treatment to a large extent is the same. A great deal of literature has accumulated on the various methods of treatment of these lesions, but they may be divided into four general classes: (1) treatment with chemicals; (2) the application of radium; (3) surgical treatment, and (4) the cautery.

TREATMENT WITH CHEMICALS

Treatment with chemicals is the method most commonly used by the general practitioner, and until recently, also by the gynecologist, and it is the least satisfactory of any method. It requires frequent office visits over a long period of time, and usually results in practically no improvement.

RADIUM APPLICATIONS

The method of radium applications has been advocated by many gynecologists, and has given excellent results in their hands. Curtis has reported eighty-seven cures in a series of 104 patients.

Although of great value, radium treatment of these conditions is not practical in the hands of men who treat most of the cervical erosions, on account of the expense, and the dangers of its use in inexperienced hands.

*Read before the St. Louis Gynecological Society, May 9, 1925.

Furthermore, it is unnecessary, as the results obtained with it are due to the same action as those obtained with the cautery; viz., destruction of pathologic tissue.

SURGERY

While surgery is to be condemned in most cervical lesions, it still has its place in the treatment of the cervix. However, it should be limited to those cases which cannot be cured with the cautery. Heineberge says: The ease with which the cervix can be amputated has led to its removal without due consideration of other possible means of restoring it to a healthy condition." Trachelectomy should be done when there is hypertrophy with extensive multiple lacerations, extensive infection and cystic change; but even here, amputation may sometimes be avoided for a more simple operation, if the cautery method is properly used a month or two before. If at all possible, trachelectomy should be avoided during the child-bearing period, as it predisposes to abortion and dystocia.

While the immediate results of surgical treatment are excellent, the end-results are far from ideal. In many cases the discharge continues, and in some cases follows where there had been none before.

Mugit says that trachelorrhaphy did not relieve endocervicitis with its discharge; that amputation was followed in four fifths of his cases by sterility, and that one half of the remainder failed to carry to term, and those who did suffered severe cervical dystocia. Abortions and premature labors followed in 55 per cent. of pregnancies after amputation. Seventy per cent. of these patients had difficult labors. Leukorrhea was relieved in nearly 60 per cent., partially relieved in 33 per cent., and unchanged in 7 per cent. It was made worse in 1 per cent. In cases in which there was no leukorrhea before operation, there was discharge in 9 per cent. after both trachelorrhaphy and amputation.

Dickinson [1] calls attention to the fact that while there must be careful adaptation of any particular operative measure to any particular cervix, many of the operative measures may be dispensed with by means of the proper use of the cautery. He says: "In a number of cases where the patient has been obliged to postpone operation for a major condition of the cervix, and this palliative treatment was used to relieve symptoms, I found operation in the end unneeded, because the healing was enduring and the inroll sufficient. Furthermore, any measure that will alleviate office treatment and obviate the pelvic obsession of the chronic office habitué is to be welcomed."

CAUTERY

Before discussing cauterization of the cervix, I shall review the pathology of cervical erosions in order that the logic of cauterization may be seen, and also to show that when properly executed, very little scar tissue should result. Polak states that nearly one half of the cervical lacerations heal spontaneously. This is true if no infection sets in, and if the laceration is not extensive. When the tears are more or less extensive and infection sets in, there is healing by granulation, and scar tissue develops at the angles. The cervical glands become infected and the lips are rolled out, everting the mucosa and exposing it to continued irritation. The cervical columnar epithelium is thus stimulated to active proliferation, and the hyperplastic thickened mucosa pushes itself out on the vaginal portion of the cervix. The everted surfaces present an angry, swollen appearance called an erosion, but which really is an overgrowth of tissue from the cervical canal covered with a single layer of columnar epithelium. The mucous membrane of the everted cervix is nearly always infected, and frequently shows microscopically a necrosis and desquamation of the superficial epithelium. The surface bleeds easily on touch, and it is this condition that should be called "erosion." The interference with the circulation by the scar tissue and the infection present causes a hyperemia and edema of the tissue. The activity of the cervical glands increases, causing a leukorrhea, at first mucoid, but later mucopurulent. The swelling and hyperplasia of the tissues block the ducts of the cervical glands, and retention or nabothian cysts result. In the partial healing of erosions, the squamous epithelium of the vaginal portion of the cervix grows into the ducts of the glands and also causes the formation of nabothian cysts. As the lymphatics of the cervix are continuous with the uterus and parametrium, it can readily be seen that unless the cervical lesion is given attention, chronic subinvolution, chronic metritis, parametritis, pelvic cellulitis, and other painful and permanent pelvic lesions may soon follow.

The method of cauterization described by Dickinson consists in linear incisions of varying depths with the cautery knife. Some discussion followed the report of this work, as to the amount of scar tissue that would result and its effect on pregnancy and labor. Subsequent events have proved all fears of this kind to be unfounded. This was to be expected, as the cautery destroyed only the hyperplastic cervical lining, which was not replaced by scar tissue, but by squamous epithelium from below. Of course, if the cautery penetrates too deeply, then the deeper cervical tissue is destroyed and this is replaced with scar tissue. Deeper cautery and scar tissue replacement is desirable only at the angles of deep lacerations, as the contraction of the granulation tissue tends to invert the everted edges, and the end-result of the whole process is a cervix that is almost nulliparous in appearance.

When Dickinson's paper appeared, I immediately began the use of the cautery in treating cervical lacerations and erosions, but, not being equipped with an electric cautery, tried what I thought would be a makeshift method until I could obtain a better outfit. The results, however, were so good, and the method so simple, that I have found it unnecessary to use any other. The method has been used in several hundred cases both in my private practice and in St. Mary's Dispensary, with almost 100 per cent. of the cases cured as to the appearance of the cervix and the discharge. There were two patients who continued to have a slight discharge, which I feel could have been cleared up with subsequent cauterization, but which caused so little disturbance that the patients did not return for further treatment. The method was not tried in cases in which hypertrophy of the cervix was extreme.

The method consisted in heating uterine dressing forceps to a cherry-red heat in a flame, and placing it in the cervical canal, which had first been prepared by gentle dilation and cleansing of all discharge. It is essential that the thick mucus be cleaned away, as this cools the forceps before they have accomplished their purpose. A complete circle of tissue is thus destroyed, less deeply at the internal os and more deeply at the external os, because of the fact that the thin point of the forceps cools more quickly than the thickened shank. One cannot destroy too much tissue in this manner unless it is done by repeated applications, and in this respect it is safer than the electrocautery method.

1. Dickinson, R. L.: Am. J. Obst. & Gynec. 2: 600 (Dec.) 1921.

The forceps are left in place about two or three seconds; on removal, a white area of necrotic tissue can be seen. Occasionally, there will be a slight bleeding, but not sufficient to cause alarm. An exudate is thrown out, and in the next day or two a necrotic plug can be seen in the cervical canal. This, if undisturbed, remains in place from about ten days to two weeks, and at this time the squamous epithelium can be seen growing toward the cervical canal, which appears bright red and without the mucous discharge. At the end of the first month, in mild cases, the entire eroded area is covered, and the cervix normal in appearance.

In the more extensive erosion the process must be repeated once or twice, as not all the pathologic tissue will be destroyed and has everted again before the surface can be covered with squamous epithelium. The time of healing varies from one month in the mild cases to two and a half months in the most extensive cases.

When I first began using this method, thin layers of damp cotton were applied to the vagina to avoid burning the patient, but this was given up, as I became more certain of my aim. If done quickly, the heat of the instrument in the vagina is not noticed. No local anesthetic is necessary, as the only pain complained of is one severe cramp in the abdomen while the forceps are in place, due to a spastic contraction of the uterus.

As with the electrocautery, the method requires no after-treatment, but merely observation about every two weeks. The method is so simple, and the result so invariably good, that no one need feel handicapped because he has no electrocautery outfit. The only contraindication to the method, as I have seen it, is in early cases of acute gonorrheal infection, when this rather drastic method may cause upward extension of the infection.

Dickinson gave seven classes of cases responding to cautery treatment: (1) rough and extensive granulation with eversion; (2) cysts, superficial or deep; (3) voluminous, adhesive mucous catarrh of the canal; (4) gonorrheal free secretions with thickened lining; (5) between birth erosion with laceration; (6) physical conditions precluding operations, and (7) marked endocervicitis in virgins. I feel that the indications can safely be extended to all inflammatory lesions of the cervix, as even the worst case, with extreme hypertrophy which may later need an operation, will be so improved that the operative procedure is made more simple and successful.

CONCLUSIONS

1. The cautery method of treatment is the method of choice in lacerations and inflammatory cervical lesions.
2. The method described is simple, efficient, and universally accessible.
3. The results, with the method properly applied, are excellent.
4. There is no cervical dystocia following its use.

Diagnosis of Cancer.—Cancer of the stomach should be suspected in any patient, especially over 35 years of age, who suffers from obstinate dyspepsia with anorexia, wasting, anemia, pain, vomiting (especially coffee-grounds), and achlorhydria. It should be remembered, however, that not more than 50 per cent. of early cancers of the stomach show achlorhydria, and that in over 25 per cent. free hydrochloric acid is either normal or excessive.—Rowland, R. P.: *Brit. M. J.* **1**:587 (March 28) 1925.

THE GROWTH, DEVELOPMENT AND PROGNOSIS OF DIABETIC CHILDREN *

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AND
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In former days on the death of a diabetic child, one felt at least that he had done his duty; but now when confronted with living diabetic children, one is not so sure. One cannot help asking, Will these precocious children grow, will they develop, or must one look forward to a stunted and nonmaturing section of society? Our purpose in this paper is to present the problem, not to solve it, and to stimulate investigations during the coming year which will enable diabetic children to grow in height as well as in weight and to go on to manhood and womanhood. Here are opportunities for the pediatrician, the dietitian and the endocrinologist.

THE MATERIAL

To show the present status of the question and to furnish some sort of basis for future studies, we have assembled our data for the last twenty-seven years, represented by 351 children in whom diabetes began before they were 15 years old. Close scrutiny of these cases, however, led to the exclusion of forty-nine of them, either because the original diagnosis was wrong or because they were doubtful or potential cases of diabetes, or cases of renal glycosuria. There remained 302 bona fide diabetic children. Of these, 162 died and 132 are alive. Six of the original 351 as yet have eluded our secretarial detectives, and two others are dead, but the date of death is unknown.

GROWTH WITHOUT INSULIN

If a diabetic child gained weight before the discovery of insulin, it was considered an extraordinary event. When it did occur it was temporary, and the weight quickly fell to below that at onset. The advent of undernutrition doubled the children's lives at the expense of their weights. The data for twenty selected patients are unusually complete during the two years of their diabetes before they were given insulin. Not one of these patients exhibited a gain in weight. At present the situation is different, because we have twelve living diabetic children who are not yet taking insulin, and these have shown an average gain in weight of 4.9 pounds (2.2 kg.) a year for an average period of 3.6 years. These are obviously mild or exceptional cases. Like our class of doubtful diabetic, potential diabetic and renal glycosuric patients, they deserve special observation, because among these a severe diabetes may appear later, or there may lurk a diabetic patient who is a "cure" or a "near-cure."

An increase in height before the use of insulin was observed in one of the twenty cases cited in the preceding paragraph. Some significance is to be accorded to this isolated observation, because the pediatricians tell us that the impulse for gain in height is stronger than that for gain in weight,

* From the New England Deaconess Hospital.
* Chairman's address, read before the Section on Practice of Medicine at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

and that it is common for a child to grow thin in order to grow tall. It is not strange, therefore, that the records of twelve living children who are not taking insulin show an average gain in height of 5.3 inches (13 cm.) during an average period of 3.6 years.

GROWTH WITH INSULIN

The weight of the diabetic child treated with insulin increases. This holds for each of the three five year periods up to 15 years. The number of pounds gained increases with the age of the child and is greatest, as in health, at the period between 10 and 14 years, when it averaged 17.1 pounds (8 kg.) for seventeen patients, during an average of eighteen months of insulin, and 19.2 pounds (9 kg.) for nineteen patients during an average of twenty-eight months of insulin.

TABLE 1.—*Increase in Weight and Height*

Growth	Diabetic Children: 12-23 Months of Insulin, Av. 18 Mos.		Diabetic Children: 24-33 Months of Insulin, Av. 28 Mos.		Normal Children; Calculated: 18 Mos.	Normal Children; Calculated: 28 Mos.
Period 1. Age at Onset, 1-4 Years						
Wt., Av. gain.....	3 cases	5.9 lbs.	11 cases	15.3 lbs.	6 lbs.	9.3 lbs.
Ht., Av. gain.....	2 cases	4.5 in.	10 cases	3.7 in.	4.5 in.	7 in.
Period 2. Age at Onset, 5-9 Years						
Wt., Av. gain.....	14 cases	8.9 lbs.	18 cases	20.9 lbs.	6.9 lbs.	12.7 lbs.
Ht., Av. gain.....	13 cases	2.3 in.	15 cases	3.6 in.	3 in.	4.7 in.
Period 3. Age at Onset, 10-14 Years						
Wt., Av. gain.....	17 cases	17.1 lbs.	19 cases	19.2 lbs.	11.6 lbs.	18.3 lbs.
Ht., Av. gain.....	15 cases	1.2 in.	14 cases	1.2 in.	3 in.	4.7 in.
Summary						
Wt., Av. gain.....	82 cases		16.4 lbs.		11.7 lbs.	
Ht., Av. gain.....	69 cases		2.3 in.		4.3 in.	

The increase in weight of thirty-four diabetic children treated with insulin over an average period of eighteen months excelled that of the normal child for the same length of time. This applied to each of the three five-year periods up to 15 years of age, and holds true as well for the forty-eight patients who were treated twenty-eight months.

The rate of growth appeared to be more rapid, the longer the insulin was used up to 10 years of age. For those patients between 10 and 14 years, the weight increased so rapidly during the first eighteen months of insulin that it was hardly to be expected that it could progress as rapidly the next ten months. One must be very cautious in the interpretation of this extra growth as a result of prolonged insulin medication, because dosage of insulin and variation in tolerance for carbohydrate may enter into it. In another paper the data will be analyzed to show the influence of these factors.

INCREASE IN HEIGHT

An increase in height is present in the insulin-treated diabetic child, but it is distinctly less than that of the normal child. A gain in height equal to the normal did take place in one of the five year groups of cases treated with insulin for twenty-eight months, but it did not appear in the others. It is less easy to measure the height of a child than the weight, and we feel that one should be very slow before drawing conclusions, until observations are continued over longer periods of time. We know from feeding experiments on animals that growth may be retarded for months and later redeemed.

TWENTY SELECTED CASES

The foregoing data for weight and height are derived from eighty-seven diabetic patients taking insulin. From these we selected twenty cases, largely Woodyatt's so-called "pedigreed" diabetic patients, and these we now present. The average duration of the disease in these cases is 4.4 years, the average age at onset 5.4 years, and they have been taking insulin on the average for thirty months. During the insulin period, all the patients gained weight, and their average gain in weight has been 10.4 pounds (4.7 kg.) as contrasted with a calculated normal gain for a child of 9.8 years of 12 pounds (5.4 kg.) in the same period. The greatest gain was 21 pounds (9.5 kg.); the least was 3 pounds (1.4 kg.). The gain in height has been 2.5 inches (6 cm.) in contrast to 5.2 inches (13 cm.) for the normal child. One of our children gained 5 inches (12.7 cm.). There were two children whose height remained unchanged.

The diets of these twenty children in the preinsulin and insulin periods were essentially the same, save for an increase in the total calories due to fat. The carbohydrate increased 5 gm., from 49 gm. to 54 gm.; the protein was 2.5 gm. per kilogram of body weight in the early period, and in the present is 2.4 gm. The calories have risen from 42 to 58 per kilogram of body weight. Insulin has been increased in 60 per cent. of these cases, unchanged in 20 per cent., and decreased in 20 per cent. It is notable that the two patients who gained most in height and weight were those in whom the insulin was reduced. The patients who required increasing insulin dosage were the ones who showed the least gain in height.

Growth in weight and height have thus far been considered, but it is worth while also to compare the living diabetic child today with the normal child, wholly apart from growth. If this is done, one finds that now our children average only 6.2 pounds (2.8 kg.) under weight for their age and height, insulin has helped to raise their nutrition so nearly to normal. It is a question whether one dares to raise it still more. What is more surprising is the fact that their average height, which one would expect from this deficient growth in height to be low, is but 0.6 inch under normal for weight and age. This anomaly is explained by the circumstance that when these children acquired diabetes, they were above normal in height, and they have not lived long enough yet to be short for their age. The short diabetic child, one pictures in one's mind, has been diabetic for many years.

Can diet do more for these short diabetic children, or must they seek the aid of the endocrinologist? We feel that diet and time should be given further trial. Others may think differently. The data a year hence on these children will be more valuable.

DEVELOPMENT

Unaided by insulin, no girl in our series developed menstruation after the onset of diabetes. In one girl, Patient 304, menstruation and diabetes began together and lasted for eight years until death from coma. Since the use of insulin, four girls have begun to menstruate for the first time, and in another the onset of menstruation and diabetes were simultaneous. Of the four girls who began to menstruate after diabetes developed, one was 17, six and a half years after her diabetes began; one was 16, five years after diabetes began; one was 14, two months after onset, and the remaining girl was 13, with diabetes of one year's duration. In

these four cases, menstruation was established from one year to two months after insulin was commenced. Menstruation ceased in six patients without insulin treatment, or became irregular soon after the onset of diabetes.

The appearance of the boys has so changed that there is little doubt of their having matured.

Diabetic children can mature, do mature and are apt to mature late, but maturity is still an unusual occurrence. Time is an important factor. If an additional four children develop sexually during the coming year, apprehension for the maturity of the remainder will in great measure cease.

Here, again, the endocrinologist has an opportunity to show his powers.

PROGNOSIS

Unless a child lives, it is futile to talk of growth or development. Of the 164 children treated without insulin, there remain but twelve alive. To be sure, the duration of the disease in this dozen is 5.2 years; but these are the exceptional cases, the milder ones, and indeed too few in number to allow foundation for favorable prediction. The 152 patients who died survived 2.4 years, and that constitutes the prognosis of the noninsulin-treated diabetic child—the duration of the disease to which we can refer as our base line.

TABLE 2.—*Duration of Life of Diabetic Children*

	No Insulin		Insulin Used	
	Living	Dead	Living	Dead
Period 1. Age at Onset, 1-4 Years:				
Cases	2	37	21	0
Duration, years	5.7	2.5	2.6	..
Period 2. Age at Onset, 5-9 Years:				
Cases	5	50	49	2
Duration, years	6.0	2.1	3.3	3.2
Period 3. Age at Onset, 10-14 Years:				
Cases	5	65	50	8
Duration, years	3.7	2.5	3.1	2.5
Summary. Age at Onset, 1-14 Years:				
Cases	12	152	120	10
Duration, years	5.2	2.4	3.1	2.7

Now for the other side of the story: Of 130 children treated with insulin between August, 1922, and March, 1925, 120 are living. Formerly it was the exception for a diabetic child to live; now it is equally exceptional for him to die. Hence, the novel problems which the living diabetic child intrudes into our practice this year. But in all the various attempts one makes to promote growth and maturity, remember it is for naught, if one does not first of all guard the diabetic child from diabetic accidents and preserve his life.

Will the diabetic child continue to live? To this one can answer first that already a goodly number, twenty, of those first treated with insulin have lived for 4.4 years and are in far better condition now than when they began insulin, two and one-half years ago. And, for that matter, the 120 have already lived 3.1 years. But there is other evidence. Forty per cent. of these selected patients have either not increased, or have actually decreased their insulin. It is possible that the same methods of treatment applied to the 60 per cent. who are taking more insulin would have rendered this unnecessary.

Finally, there is the pathologic evidence which Boyd and Robinson first published; namely, the demonstration of the regeneration of island cells. To this we can add, for Shields Warren and Howard Root [1] are to report twenty-six necropsies on diabetic patients which to some extent show that regeneration of the pancreas takes place more in the subsequent years than in the early years of the disease.

This affords confirmation of the clinical statement that if the diabetic patient survives the first year of his disease, the diabetic danger zone, he has a far better chance to live many years, because regeneration of the pancreas has begun.

CONCLUSIONS

1. The gain in weight of the diabetic child treated with insulin resembles that of the normal child, but the diabetic child is still underweight for his age, though often not for his height.

2. The increase in height of the diabetic child treated with insulin, though occasionally normal, is usually below that of the normal child. So far he has not grown tall like the normal child, either at the expense of growing thin, or while being well nourished.

3. The sexual development of the diabetic child appears assured.

4. The prognosis of the diabetic child treated with insulin is still problematic, but clinical, therapeutic and pathologic evidence sets no bounds.

1. Shields Warren and Root: J. Path. & Bacteriol., to be published.

DISSECTING ANEURYSM WITH SIGNS OF AORTIC INSUFFICIENCY

REPORT OF A CASE IN WHICH THE AORTIC VALVES WERE NORMAL *

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In a recently observed case of dissecting aneurysm there were present during life the typical signs of aortic insufficiency; at necropsy the aortic valves were found to be normal. Similar cases have been described by Börger,[1] Busse,[2] and Letulle.[3] In a few of the cases of dissecting aneurysm collected by Moreau [4] there were observed signs which may have been interpreted as being due to aortic insufficiency; but the anatomic findings are too inadequately detailed to allow one to judge of the condition of the aortic valves. We have not attempted to investigate the entire literature of dissecting aneurysm, which now comprises the reports of about 300 cases. It should be pointed out that in most instances death occurs so soon after the development of the lesion, usually as the result of perforation into the pericardium or pleural cavities, that satisfactory clinical observations have not been possible. Moreover, of the small group of cases (approximately fifty) in which recovery has taken place by reperforation into the arterial system, usually into the aorta, several cases have been discovered as necropsy specimens without clinical data. We have reviewed the histories of about half the number of so-called healed cases, and have encountered those instances which we have mentioned above in which signs of aortic insufficiency were present with-

* From the Medical Clinic of the Johns Hopkins Hospital.

1. Börger, H.: Ueber einen Fall von geheiltem Aneurysma dissecans der Aorta, Ztschr. f. klin. Med. **58**: 282, 1906.

2. Busse, O.: Ueber Zerreissungen und traumatische Aneurysmen der Aorta, Virchows Arch. f. path. Anat. **183**: 440, 1906.

3. Letulle, M.: Anévrisme disséquant étendu à la totalité de l'aorte et spontanément guéri; signes d'insuffisance aortique avec integrité parfaite des valvules sigmoïdes, Bull. et mém. Soc. méd. d. hôp. de Paris **22**: 1045, 1905.

4. Moreau, E.: Contribution a l'étude des anévrysmes disséquants de la crosse de l'aorte, Paris, 1907.

out valvular lesion. We wish to call attention, therefore, to the fact that these findings are not altogether uncommon in those cases of dissecting aneurysm in which recovery ensues, at least temporarily, owing to reentrance of the aneurysm into the aorta.

REPORT OF CASE

History.—J. P., a colored laborer, aged 57, was admitted, Jan. 26, 1924, to Johns Hopkins Hospital, because of shortness of breath and pain in the abdomen. There was no history of syphilis. His health had been excellent except that there may have been some slight dyspnea on exertion for a short time before the onset of the illness that brought him to the hospital. About four weeks before, while walking to work, he was seized with a sudden dull aching pain behind the sternum and about the umbilicus. The pain stopped temporarily, but the moment he started to walk the attack came on again, and he lost consciousness for about ten hours. Since then he had remained in bed, suffering almost continuously from retrosternal and abdominal pain, hot flushes, cold sweats, and cramps in his legs. Just before his attack he had had a little swelling of the eyelids, which was said to have returned afterward. About two weeks later, the attacks of dyspnea became worse and the patient became orthopneic. During the last three weeks there was a severe cough, productive of bloody sputum. For two weeks there had been palpitation, and tenderness over the precordium, especially in the apical area; later he suffered from ringing in his ears, blurring of vision and occasional delirium.

The patient was unconscious on admission; there was marked dyspnea and orthopnea, and the respirations were Cheyne-Stokes in character. There was frequent cough, with frothy bloody expectoration. The cervical veins were distended. There was conspicuous pulsation of the superficial arteries. The bases of the lungs showed evidences of congestion, and coarse râles were heard throughout the chest.

The apex of the heart was in the sixth interspace, 15 cm. from the median line; it was moderately forceful. The right border was 5 cm. from the median line by percussion. There was a loud to and fro murmur over the aortic area; the systolic murmur was heard in the vessels of the neck, and the diastolic along the left sternal border. The heart action was regular. The radial arteries were thickened and somewhat tortuous. The pulses were markedly water-hammer in quality, a capillary pulse was visible in the finger-nail beds, and a pistol shot sound was audible over the brachial and femoral arteries. The double murmur of Durosiez was heard on compression of the femorals. The blood pressure was 145 systolic and 40 diastolic.

Except for some rigidity of the right rectus muscle, the abdominal examination was negative. The liver and spleen were not palpable. There were no noteworthy abnormalities in the extremities or reflexes. There was a moderate degree of sacral edema.

There were 15,000 white blood cells per cubic millimeter, 81 per cent. of these being polymorphonuclear leukocytes. The urine contained a small amount of albumin and a few casts. The blood Wassermann reaction was negative.

Two days later the patient was less ill, and consciousness was regained. His pulse was totally irregular; an electrocardiogram showed auricular fibrillation and left ventricular preponderance; the T wave in Lead I was inverted. On the following day there was a spontaneous reversion to normal mechanism; the P-R interval was 0.19 second. On this day he complained of a severe pain over the left side of the chest, and a pleural friction rub was heard over this area. On the following day, January 30, he became comatose again and died. Throughout his short stay in the ward, there was a fever ranging between 99.5 and 104 F. A questionable pericardial friction rub was heard by one observer.

The diagnosis was not clear, but it was generally thought that the patient, with aortic insufficiency dependent on either arteriosclerotic or syphilitic changes in the aortic valves, had had a coronary occlusion, which was followed by myocardial infarction and thrombosis and pulmonary embolism.

Anatomic Diagnosis.—Dr. A. R. Rich performed the necropsy, which revealed: a dissecting aneurysm involving the entire aorta and many of its branches, with a thrombus in the cleft along the left iliac artery; hypertrophy of the heart; fibrinous pericarditis; pulmonary and renal infarcts; hydrothorax; chronic passive congestion of the viscera, and cirrhosis of the liver.[5]

The pericardium was covered with a slight fibrinous pericarditis. The heart was rather large, weighing 680 gm. The valves were normal. The aortic valve measured 8.5 cm. The coronary arteries were not sclerotic, nor was the aorta sclerotic to any significant degree. The internal lining of the aorta revealed nothing suggestive of syphilis. Just above the aortic valves there was a sharp transverse break in the intima 3 cm. in length. A second sharp transverse cut, 1.5 cm. in length, was found a few centimeters below. These extended to the media, which was slit down to the bifurcation of the aorta. The dissecting aneurysm was lined with endothelium.

There were several thrombi in branches of the pulmonary arteries, and the lungs contained several large infarcts and diffuse early pneumonia. There were patches of fibrinous exudate on the pleural surfaces. With the exception of a nodular cirrhosis of the liver, the rest of the organs were essentially normal. No definite cause for the dissecting aneurysm was found.

COMMENT

We do not propose to enter into a detailed description of the clinical history and course of dissecting aneurysm, for this has been adequately done in the papers of Peacock [6] and more recently by Moosberger.[7] We shall mention briefly the outstanding features of the typical case. Usually the patient is a man, between 40 and 60 years of age, whose previous health has been good. He is suddenly seized with a violent tearing pain behind the sternum and perhaps in the abdomen, the attack often coming on during some severe muscular effort. Collapse frequently occurs soon after the onset of the attack, sometimes as the initial symptom. In a large number of cases, death occurs within a very short time; or, on recovery from the symptoms of shock, the patient may experience severe pains behind the sternum, more or less continuous, associated with marked dyspnea, and the patient succumbs, usually suddenly, in a day or two. In these cases the cause of the fatal outcome has been the perforation of the dissecting aneurysm, most frequently into the pericardium (the rupture of the aorta occurring commonly within a few centimeters of the aortic valves), less often into the left pleural cavity.

In a small percentage of cases, recovery takes place following the establishment of a second opening between the dissecting aneurysm and the aorta, the walls of the aneurysm eventually becoming lined with endothelium. To these cases the term "healed" has been applied.

For obvious reasons, the diagnosis of the condition is difficult, attested by the fact that there are reports of only four or five cases in which it has been correctly made during life.[7] The condition is rare; in acute cases, death usually occurs before satisfactory observations are possible; and ordinarily the clinical picture presents no characteristic diagnostic features. In many respects there is a close similarity between these cases and those of coronary occlusion. Probably the best lead to a correct diagnosis is the discovery of inequality of pulses, usually in the arms, or of other signs of mediastinal pressure, these having developed rapidly in a

5. This lesion probably accounts for the failure of the liver to become sufficiently enlarged to be detected clinically.
6. Peacock, T. B.: Report on Cases of Dissecting Aneurysm, Tr. Path. Soc. London **14**: 87, 1863.
7. Moosberger, W.: Zur symptomatologie des Aneurysma dissecans, Schweiz. med. Wchnschr. **54**: 325 (April 3) 1924.

patient whose symptoms have been such as we have described above.

We were particularly interested to seek an explanation for the occurrence of the signs of aortic insufficiency in the absence of organic valvular change. The peripheral signs of aortic insufficiency are also found in cases of arteriovenous fistula when the aortic valves are normal, and Lewis and Drury [8] have presented evidence to show that some of these phenomena, namely, the high pulse pressure and the water-hammer and collapsing qualities of the pulses, are dependent on a leak of blood from the arterial to the venous systems. Other signs, such as Hill and Rowland's differential pressure sign and the capillary pulse, were shown to be consecutive to the changes in the arterial pulse and due to unknown factors. It has seemed to us not improbable that similar explanations may be applicable to the peripheral circulatory signs present in some cases of dissecting aneurysm, the leak of blood occurring from the main arterial channels into the accessory channels formed by the dissecting aneurysm. The presence or absence of these findings may conceivably be dependent on the size and direction of the openings from the aorta into the dissecting aneurysm, these factors determining whether or not a sufficiently large amount of blood is diverted from the aorta to allow of the development of the typical peripheral signs of aortic insufficiency. It was to such a regurgitation of blood into the aneurysmal cavity that Letulle ascribed the occurrence of the signs of aortic insufficiency in his case. If the peripheral signs of aortic incompetence were actually due to a leak of blood into the aneurysm through the breaks in the intima, it is also possible to explain the presence and apparently typical propagation of the diastolic murmur, since the openings in the intima lay just above the aortic valves.

The heart of our patient was conspicuously enlarged, and this has been true in many of the cases of dissecting aneurysm in which recovery has taken place. In some of these there has been present an obvious cause for cardiac enlargement; in others, the cause has not been clear. In either case, it has been noted that patients who have recovered after the initial stormy symptoms and who later at postmortem examination have been shown to have dissecting aneurysm have frequently died of myocardial failure, an observation made many years ago by Peacock. Moreover, in a few of the instances in which it has been possible to examine patients from the onset of acute symptoms to the time of death, perhaps months later, progressive enlargement of the heart has been observed. This finding offers another analogy between these cases of dissecting aneurysm and arteriovenous fistula, in which condition cardiac enlargement is commonly found. From their study of arteriovenous fistula in man, Lewis and Drury suggested that this enlargement, primarily a dilatation, was caused by malnutrition of the heart muscle, due to a lowering of mean arterial pressure. Harrison, Dock and Holman [9] have demonstrated experimentally that there is an increased circulatory minute volume in arteriovenous fistula, so that one must also consider the possibility of increased work of the heart being a factor in the cardiac dilatation and hypertrophy of this condition. How far either or both of these factors, namely, diminished coronary flow and increased work of the heart, play a rôle in the cardiac enlargement of dissecting aneurysm we have no definite knowledge. The similarity in other respects between cases of arteriovenous fistula and of dissecting aneurysm (such as we have described) suggests that the same influences may be present in the two instances.

We have deferred discussing the obvious possibility that in a case such as we have described there may have existed an actual relative aortic insufficiency. In the large majority of cases, such a condition depends on widening of the aortic ring due to structural change in the aortic wall. This was absent in our case; the measurement of the aortic valve was normal for the patient's age. Rarely relative aortic insufficiency is due to weakness of the musculature supporting the aortic ring.[10] If our assumption is correct, however, that the rapid progression of myocardial failure was due, in part at least, to malnutrition of the heart muscle, and this in turn was due to a fall in mean arterial pressure, one must conclude that if there was some degree of relaxation of musculature about the aortic ring, this change must have been a secondary one, and dependent on the previously present fall in diastolic pressure.

8. Lewis, T., and Drury, A. N.: Observations Relating to Arteriovenous Aneurysm; Circulatory Manifestations in Clinical Cases with Particular Reference to Arterial Phenomena of Aortic Regurgitation, Heart **10**: 301 (Oct.) 1923.

9. Harrison, T. R.; Dock, W., and Holman, E.: Experimental Studies in Arteriovenous Fistulae: Cardiac Output, Heart **11**: 337 (Dec.) 1924.

10. Anders, J. A.: Relative Aortic Incompetency of Muscular Origin, Bull. Johns Hopkins Hosp. **20**: 205 (July) 1909.

CEREBROSPINAL FLUID AS INDEX OF OTORHINOGENIC INTRACRANIAL COMPLICATIONS *

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This study is based on cases observed at Cook County Hospital, consisting of 155 cases of meningitis, forty-three cases of lateral sinus thrombosis, thirty-five cases of brain abscess, eight cases of labyrinthitis, four cases of extradural abscess, two cases of cavernous sinus thrombosis and one case of subdural abscess.

The normal cerebrospinal fluid is a clear, colorless, sterile fluid, under normal pressure, containing sugar but no globulin and in the adult not more than 8 lymphocytes per cubic millimeter. McLean [1] states that in children, the average is 4 lymphocytes but that as many as 20 lymphocytes may be found in a normal child.

The results of the examination of the cerebrospinal fluid in these cases may be conveniently divided into two groups: Those presenting negative, or normal, cerebrospinal fluid findings, and those presenting positive, or pathologic, cerebrospinal fluid findings.

CASES PRESENTING NORMAL CEREBROSPINAL FLUID FINDINGS

In acute and chronic suppurative otitis media, mastoiditis and nasal sinusitis not complicated by meningitis, extradural abscess, subdural abscess or brain abscess; in thrombosis of the lateral sinus and jugular bulb, cavernous sinus thrombosis, labyrinthitis and acute toxic meningo-encephalitis unassociated with the foregoing intracranial complications. The cerebrospinal fluid is normal in meningismus, which may be mistaken for meningitis especially in infants and young children with pneumonia or an acute suppurative otitis media.

* From the Otorhinolaryngologic Department of Cook County Hospital.
* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

1. McLean, S.: The Cerebrospinal Fluid in Infants and Young Children in Conditions Other Than Acute Meningitis, Am. J. M. Sc. **166**: 350 (Sept.) 1923.

CASES PRESENTING PATHOLOGIC CEREBROSPINAL FLUID FINDINGS

A. *Meningitis.*—Of 155 cases in which the amount of the cell count was recorded, thirty-eight cases of otitic meningitis had a cell count that was below 5,000 cells in 50 per cent.; of seventy-seven cases of meningitis of undetermined origin, the cell count was below 5,000 cells in 67 per cent.; and of forty cases of epidemic meningitis, the cell count was below 5,000 cells in 72 per cent. Meningitis may be clinically classified according to the cytology and bacteriology of the cerebrospinal fluid, as follows:

(*a*) As to the presence of a clear or cloudy cerebrospinal fluid:

1. Serous meningitis (thirty-six cases). The cerebrospinal fluid is under increased pressure, is clear, is colorless and contains from 15 to 250 cells per cubic millimeter, mostly lymphocytes (but polymorphonuclears may be in the majority). Globulin tests are usually positive, and sugar is usually absent. Serous meningitis may be associated with extradural abscess, brain abscess, syphilitic meningitis, tuberculous meningitis, cerebrospinal syphilis, epidemic encephalitis, poliomyelitis, acute toxic meningo-encephalitis and with the acute respiratory infections in children. McLean,[1] in a study of sixty-seven cases of acute respiratory infections in children, found that five had a cell count of 30 or more and four had more than 60 cells per cubic millimeter.

2. Suppurative meningitis (119 cases). The cerebrospinal fluid is under increased pressure. It is turbid, varying from a recognizable cloudiness to purulence, the cell count being proportionate to the degree of turbidity present from 250 cells upward into the hundreds of thousands and consisting mostly of polymorphonuclears. Globulin tests are markedly positive, and sugar is absent. Suppurative meningitis may be associated with subdural abscess, or brain abscess when the cell count is low or moderate; a very high cell count nearly always signifies the presence of an acute diffuse suppurative meningitis.

(*b*) As to the extent and character of meningeal involvement:

1. Diffuse meningitis. (1) Serous: The cerebrospinal fluid is clear, but has a cellular increase and bacteria are found. In eleven cases out of the thirty-six cases in which the cell count was 250 or less, or in 30 per cent, bacteria were found. (2) Suppurative: The cerebrospinal fluid is cloudy. There are two groups: In one, bacteria are found; in the other, bacteria are not demonstrable; both have associated a high cell count, from 5,000 cells and upward.

2. Circumscribed meningitis. (The cerebrospinal fluid is sterile.) (1) Serous: The cerebrospinal fluid is clear, but the cell count is increased up to 250. (2) Suppurative: The cerebrospinal fluid is cloudy, and the cell count is increased from 250 to 5,000 cells. This group is identical with that termed protective meningitis[2] or sympathetic meningitis,[3] and may be found associated with a brain abscess.

In twenty-six cases of diffuse meningitis (eleven serous and fifteen suppurative) in which bacteria were found either by direct smear or by culture, and in which the cell count was 600 or less, ranging from 30 to 600 cells, and averaging 318 cells per cubic millimeter, eight patients, or 30 per cent. recovered. The cell counts in the patients who recovered were 30, 110, 120, 135, 141, 270, 500 and 513. Friedländer's bacillus was found on culture in the case presenting 30 cells; the staphylococcus was found on culture in the cases presenting 135, 141 and 270 cells; the streptococcus was found on culture in the cases presenting 110 and 270 cells; the meningococcus was found in the case presenting 500 cells, and gram-positive diplococci were found in the cases presenting 120 and 513 cells.

B. *Brain Abscess.*—In twenty-four cases of otorhinogenic brain abscess in which the diagnosis was confirmed either by operation or at necropsy, the cell count was under 500 cells in 95 per cent. of the cases. The cell count ranged from 5 to 2,300 cells and averaged 256 cells; it was 8 or less in 12.5 per cent; 25 or less in 25 per cent, and 50 or less in 41 per cent.; 100 or less in 55 per cent. The cell count ranged from 100 to 500 cells in 40 per cent.

There were seven cases of brain abscess complicated by an acute diffuse suppurative meningitis that were not included in the foregoing group in which the polymorphonucleosis was pronounced, ranging from 11,000 to 56,000 cells and averaging more than 25,000 cells.

Results of cytologic examination of the cerebrospinal fluid associated with brain abscess were as follows:

1. Associated with a normal cerebrospinal fluid there were eight cases. The diagnosis was made at operation or necropsy. There were three cases of brain abscess that were found at necropsy unassociated with a meningitis.

2. Associated with a circumscribed meningitis there were two groups: (*a*) Serous meningitis: In 55 per cent. of the twenty-four cases of brain abscess in which the diagnosis was confirmed either by operation or at necropsy, the cell count was less than 100 cells. (*b*) Suppurative meningitis: The cell count ranged between 100 and 500 cells in 40 per cent of the twenty-four cases of brain abscess.

3. There were seven cases associated with a diffuse suppurative meningitis among the twenty-four cases of brain abscess.

4. Extradural abscess is usually associated with the cerebrospinal fluid findings of a circumscribed serous meningitis. In one case, the cerebrospinal fluid was normal. In four cases, the cell count was 20, 25, 33 and 52, consisting mostly of lymphocytes, with globulin slightly positive or positive and the fluid sterile.

5. Subdural abscess was found at operation associated with an extradural abscess in two cases; in one case, the cell count was 2,160, mostly polymorphonuclears; in the other case, the cell count was 78 lymphocytes. In both cases a circumscribed meningitis was present; in the former a suppurative, and in the latter a serous, meningitis.

6. Two cases of cavernous sinus thrombosis secondary to suppurative sphenoiditis were observed; one was associated with an extradural abscess, with a cell count of 33; the other with a diffuse suppurative meningitis, with a cell count of 400.

7. Three cases of lateral sinus thrombosis had associated a perisinuous abscess and a periphlebitis with a cell count of 20, 25 and 33. Of the twelve cases that were associated with meningitis, the cell count was less than 500 in 25 per cent.; from 1,000 to 5,000 to 42 per cent.; from 5,000 to 10,000 in 17 per cent., and from 10,000 to 100,000 in 16 per cent. The cell count was below 1,000 in 67 per cent. of the cases. All but one case in which the cell count was pathologic were

2. Eagleton, W. P.: Operative Treatment of Suppurative Meningitis, Laryngoscope **32**: 1 (Jan.) 1922.

3. Plaut and Schottmüller Leitfaden zur Untersuchung der Zerebrospinalflüssigkeit, quoted by Strauss, I.: Meningitis Sympathetica, Am. J. M. Sc. **154**: 748 (Nov.) 1917.

fatal; in the case in which the patient recovered, the cell count was 15.

CYTOLOGY AND BACTERIOLOGY OF CEREBROSPINAL FLUID IN PATIENTS THAT RECOVERED

1. *Meningitis.*—Of the 155 cases of meningitis of all types, recovery occurred in only nineteen, a mortality of 88 per cent. The mortality in thirty-eight cases of otitic meningitis was 95 per cent.; in forty cases of epidemic meningitis, 87.5 per cent.; in seventy-seven cases of meningitis of undetermined origin, 90 per cent.; and in thirty-six cases of serous meningitis, 84 per cent. Of the thirty-six patients with serous meningitis (with a cell count less than 250 cells), six recovered, or 17 per cent.; the cell counts ranged from 15 to 141 cells, and bacteria were found on culture in 50 per cent. of the cases. Of 119 patients with suppurative meningitis, thirteen recovered, or about 11 per cent.; of these cases, five were cases of epidemic meningitis; two of staphylococcus; one of pneumococcus, and five of undetermined origin. The cell count of the meningococcic group ranged from 770 to 7,760 and in the other group from 400 to 1,400 cells.

2. *Brain Abscess.*—Of the two patients that recovered, one had a cell count of 240, 250, and 650, with globulin positive and sugar absent and fluid sterile; in the other case, the cerebrospinal fluid was normal.

3. *Extradural Abscess.*—In one case associated with an acute suppurative frontal sinusitis and osteomyelitis of the frontal bone plus an acute toxic meningoencephalitis, the cell count was 52, with globulin positive, sugar absent and the cerebrospinal fluid sterile.

CLINICAL AND NECROPSY FINDINGS IN BRAIN ABSCESS AND MENINGITIS

In a case of brain abscess, previous to the drainage of the abscess the cell count was 60; sixty days later, when an acute diffuse suppurative meningitis occurred, the cell count was 21,000 and streptococci were found in the cerebrospinal fluid. A similar case showed a cell count of 94, and later on the cell count became increased to 56,000 but no bacteria were found. In both cases the cellular increase with the onset of the acute diffuse suppurative meningitis consisted mostly of the polymorphonuclears. The diagnosis of brain abscess was made in a case presenting a cell count of 130 that was confirmed by operation; twenty-four hours later the patient died, and necropsy showed an acute diffuse suppurative meningitis.

The cerebrospinal fluid may be normal in brain abscess, as demonstrated by the two following cases:

In one, two cell counts showed 7 and 4 lymphocytes, with globulin absent; also the clinical signs of meningitis were absent, but there were signs suggestive of an otitic brain abscess, as suppurative otitis media, headache, vertigo, paresis of the face and slow pulse (60). Operation consisted of a mastoidectomy, with exploration of the dura for an extradural abscess but none was found. Necropsy showed a right temporal lobe abscess.

In the other case, the cell count was five lymphocytes, with globulin absent. A diagnosis of a left temporal lobe abscess was made because of the presence of a sensory aphasia (anomia), vertigo, slow pulse (50) subnormal temperature and headache. Following the drainage of the brain abscess, the patient made an uneventful recovery. A frontal lobe abscess was found at necropsy unassociated with meningitis in a case that showed the clinical signs of meningitis, 450 cells and bilateral choked disk. A cerebellar abscess was found at necropsy unassociated with meningitis in a patient who had a cell count of 2,300.

A case in which there were cell counts of 80,560 and 14,000, with the spinal fluid Wassermann reaction negative but the blood Wassermann reaction positive, showed at necropsy a gumma of the brain but no meningitis. A case in which the cell count was 6,000 showed at necropsy no gross meningitis, but microscopically a meningomyelitis was found. A case in which there was a cell count of 37 showed at necropsy no meningitis. On the other hand, two cases in which there were cell counts of 12 showed at necropsy an acute diffuse suppurative meningitis.

COMMENT

1. *Brain Abscess.*—It is a well known clinical fact that occasionally we find a normal cerebrospinal fluid associated with a brain abscess; this is because the abscess is so situated in the brain substance that it does not cause any meningeal irritation. In this group belongs 12.5 per cent. of the twenty-four cases of brain abscess. Eagleton [4] states that, during the stage of localization of a cerebral suppuration, the cell count is high only in the active stage, and after the abscess is walled off from the meninges and the surrounding cerebral substance, the cell count becomes normal. He also emphasizes the fact that while an increase in the cell count is important in the diagnosis of a brain abscess, its absence should not militate against the probability of an intracranial suppuration being present in a suspicious case.

In 87.5 per cent of the twenty-four cases of brain abscess, a circumscribed meningitis was associated, which was sterile and was either serous or purulent; in the majority of cases it was serous.

It is very rare to have a patient with brain abscess with a high cell count (above 5,000) recover, but Boot,[5] reports two such cases, in one of which there were 6,250 and in the other, 16,300 cells.

During the postoperative course of a brain abscess, frequent examination of the cerebrospinal fluid will give valuable information regarding the progress of the intracranial suppuration. An increase in the cell count will suggest at once the necessity of better surgical drainage, which may be the means of preventing the onset of a fatal meningitis.

2. *Meningitis.*—Nearly all cases of meningitis except those secondary to a bacteremia are circumscribed in the beginning. Circumscribed meningitis is a precursor of diffuse meningitis. It is impossible to differentiate clinically a circumscribed from a diffuse meningitis in all cases. The best clinical test of the presence of a diffuse meningitis is the finding of bacteria in the cerebrospinal fluid. In some cases, the cytologic findings in the cerebrospinal fluid may help in the differentiation; a high cell count points to a diffuse and a low one to a circumscribed meningitis. In the intermediate cases, the distinction becomes more difficult or impossible. The cases that we classify clinically as circumscribed are found at necropsy, not infrequently, to be diffuse. This is more likely to occur in the cases in which only one examination of the cerebrospinal fluid was made, and this days before death.

In order that the examination of the cerebrospinal fluid may be an accurate index of the character and

4. Eagleton, W. P.: Brain Abscess: Its Surgical Pathology and Operative Technic, New York, the Macmillan Company, p. 161.
5. Boot, G. W.: Brain Abscess of Otitic Origin, Tr. Am. Acad. Ophth. & Oto-Laryngol., 1920.

extent of the intracranial suppuration, it should be performed as often as is needed for this purpose. The cerebrospinal fluid may undergo a radical transformation within twenty-four hours. It is especially important that the examination be made at least twenty-four hours before death, that the findings may be compared with fairness with the necropsy findings.

The distinction between a serous and a suppurative meningitis is easily made from the appearance of the cerebrospinal fluid; in the former it is clear, while in the latter it is cloudy. In making an arbitrary division between a serous and suppurative meningitis, with regard to the size of the cell count, it was ascertained that most of the cerebrospinal fluids with a cell count above 250 were cloudy, while those below 250 were clear. A distinction between serous and suppurative in many cases is that in the former the cellular increase consists mostly of lymphocytes, while in the latter it is polymorphonuclear. The cases of suppurative meningitis in which there is a high polymorphonucleosis (above 5,000) with a sterile fluid should be considered as diffuse meningitis, because these cases at necropsy show a diffuse meningitis. But it not infrequently happens that a diffuse suppurative meningitis is found at necropsy in which the cell count was 1,000 or less, with or without bacteria. In eleven cases of diffuse suppurative meningitis seen at necropsy, in which cultures of the cerebrospinal fluid had been made during life, bacteria were found in only four cases. It not infrequently happens that cultures of the cerebrospinal fluid are negative during life, but may be positive postmortem.

Of sixty-three cases of otitic meningitis,[6] lumbar puncture was done in fifty-three cases, or 84 per cent.; direct smears were made in forty-two cases and bacteria found in twenty-nine, or 69 per cent.; cultures were made in twenty-five cases and were positive in fourteen, or 56 per cent. Either cultures or direct smears were made in forty-six cases and bacteria found in thirty-one cases, or 67 per cent.

Of sixty cases of otitic meningitis,[7] lumbar puncture was done in thirty-eight cases, or 67 per cent., and bacteriologic examination was recorded in twenty-eight cases and bacteria found in twenty-two cases, or 78 per cent.

Of sixty-one cases of otitic meningitis,[8] bacteria were found in thirty-seven cases, or 60 per cent.

To recapitulate, of a total of 135 cases of otitic meningitis in which a bacteriologic examination of the cerebrospinal fluid was made, bacteria were found in ninety cases, or 67 per cent.

While there are cases in the literature of meningitis with recovery in which the cell count was above 5,000 and the fluid sterile, most of these were either cases of meningococcic or syphilitic meningitis or were associated with brain abscess. Eagleton,[9] in a study of the literature up to 1923, found less than forty cases of nonmeningococcic diffuse meningitis in which the patients recovered. Among sixty-three patients with otitic meningitis [6] observed at Cook County Hospital, only two recovered; one with a cell count of 110, with streptococci in the direct smear and in the culture, the other with a cell count of 400 and fluid sterile. Among sixty patients with otitic meningitis [7] observed at the Massachusetts Charitable Eye and Ear Infirmary, only two recovered: one with a cell count of 800, with fluid sterile, and the other with a cell count of 65,000, the culture showing large cocci in short chains, probably streptococci; at a later puncture, the cerebrospinal fluid was clear, with 270 cells and no growth of bacteria. Among the thirty-six patients with serous meningitis (cell count less than 250), six, or 17 per cent., recovered; of these cases, twenty-five should be classified as circumscribed, because the fluid was sterile, and eleven as diffuse, because bacteria were found in the cerebrospinal fluid. Among the twenty-six patients with serous or purulent meningitis, but with the cell count below 600, and in whom bacteria were found in the cerebrospinal fluid, eight, or 30 per cent., recovered. These twenty-six cases, according to our classification, all belong to the diffuse type of meningitis. Singer [10] states that a circumscribed meningitis is not infrequently associated with bacteria in the cerebrospinal fluid, associated with low cell counts, and these are the cases that constitute the bulk of the reported cures of meningitis.

How can the relatively low mortality rate in this group of cases be explained? If we can eliminate accidental bacteriologic contamination or other technical error, we shall have to assume that the virulence of the infecting micro-organism was of an extremely low grade; that the protective mechanism of the cerebrospinal system was sufficient to produce an immunity against the invading organism, or that the meningeal involvement was not very extensive.

SUMMARY

The cerebrospinal fluid is a reliable index of some of the intracranial complications of otorhinogenic origin, such as meningitis, brain abscess, and subdural and extradural abscess in the vast majority of cases. It is of value not alone as an adjunct in the diagnosis of these cases but also in the prognosis and treatment. In order that the cerebrospinal fluid examination may be an accurate index of the intracranial pathologic changes present, the examinations should be performed in a scientific manner as regards the cytologic, chemical, serologic and bacteriologic determinations, and should be repeated as often as necessary. The information gained from an examination of the cerebrospinal fluid may be pathognomonic in some cases; in others it may be misleading and should not be relied on to the exclusion of other dependable clinical signs indicative of intracranial involvement. The knowledge obtained from examination of the cerebrospinal fluid may be of value either in a positive or a negative manner. A negative finding at once differentiates a meningismus from a meningitis and it usually eliminates meningitis, brain abscess, subdural and extradural abscess. One negative finding of the cerebrospinal fluid in a case of threatened or manifest intracranial complication should not be considered final.

A sterile cerebrospinal fluid with a low cell count (from 25 to 250) excludes a suppurative meningitis, but throws suspicion on the presence of an extradural or brain abscess; in a medium cell count (from 250 to 2,500), one should suspect a subdural or brain abscess or meningitis; but, in the high (over 5,000) and very high (over 10,000) cell count a diffuse suppurative meningitis is usually present. The higher the cell count, the more certain the diagnosis of diffuse septic

6. Yerger, C. F.: Meningitis of Otitic Origin, J. A. M. A. **79**: 1924 (Dec.) 1922.
7. White, L. E.: Papilledema in Oto-Laryngology, Arch. Ophth. **54**: 142 (March) 1925.
8. Mygind, Holgert: Ztschr. f. Nervenh. **40**: 1910.
9. Eagleton, W. P.: Operative Treatment of Suppurative Meningitis, Atlantic M. J. **26**: 575 (June) 1923.
10. Singer, H. A.: Spinal Fluid Changes in Inflammation of the Brain and Meninges of Oto-Rhinologic Origin, Tr. Chicago Oto-Laryngol. Soc., 1923.

meningitis. A diffuse meningitis is considered clinically proved when bacteria are found in the cerebrospinal fluid.

In a circumscribed meningitis, serous or suppurative, of otorhinogenic origin, the cerebrospinal fluid returns to normal after the removal of the focus of suppuration as extra dural or brain abscess; but when the drainage is insufficient, it does not return to normal, and when complicated by an acute diffuse suppurative meningitis, there occurs a sudden and marked increase in the polymorphonuclear leukocytes, with or without the association of bacteria.

In every case of otorhinologic infection associated with the cerebrospinal fluid findings of a sterile serous meningitis or of a sterile suppurative meningitis, we must not overlook the following diagnostic possibilities: in the former group, the intracranial complications of otorhinologic origin such as meningitis, extradural, subdural or brain abscess, acute toxic meningo-encephalitis of otorhinogenic origin;[11] tuberculous or syphilitic meningitis, poliomyelitis or epidemic encephalitis; and in the latter group the intracranial complications of otorhinogenic origin, as meningitis and brain abscess; or epidemic meningitis (meningococcic) and syphilitic meningitis.

Diffuse septic (bacterial) suppurative meningitis is associated with a high polymorphonuclear cell count plus the invading bacteria; it is frequently the sole otitic intracranial complication, but it may be associated with brain abscess or septic sinus thrombosis as a terminal complication.

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ABSTRACT OF DISCUSSION

DR. WELLS P. EAGLETON, Newark, N. J.: All the progress that has been made in suppurative diseases of the head has been accomplished by careful study of the normal physiologic and pathologic relationship that exists between the cerebrospinal fluid and the circulatory and respiratory systems in general. Dr. Yerger has spoken about brain abscess. In 1916 my attention was first called to this by our pathologist, who asked me to see a patient, 64 years old, on whom a lumbar puncture had been made for a hemiplegia from supposed apoplexy; and from his standpoint the fluid suggested a protective meningitis, although the history was so indefinite that they knew very little about it. The ear was normal at examination, but later the operation confirmed the diagnosis of brain abscess. At that time our pathologist, Dr. Martland, coined the word "protective meningitis," and I think it should be used because it means something from a diagnostic standpoint. Dr. Yerger has emphasized that, in a general way, a low cell count is of good prognostic import. But we should go a little further, I think, and realize that meningitis in the early stages is in a vast majority of cases a localized process; and while the fluid obtained from lumbar puncture may be sterile and have a low cell count, fluid obtained from the cisterna may have a high cell count. We have long known that there is a difference in the percentage of chlorids in the cerebrospinal fluid and in the blood, but it is only recently that Greenfield of London demonstrated that this is of the greatest prognostic value because, if the barrier between the blood and the cerebrospinal fluid is once broken down, it means the patient will die. Is lumbar puncture dangerous? Yes and no. We know that lumbar puncture performed in the presence of blood stream infection has certain dangers, not the least of which is that of stirring up a meningitis that previously may have been latent; so that in suspected cases of sinus thrombosis we should draw the least amount of fluid through the smallest needle and use that for diagnostic examination. And then, again, we must realize that lumbar puncture in cases in which the increase of the cerebrospinal fluid is evenly distributed is safe; but lumbar puncture performed in cases in which there is cerebral displacement (as a cerebral abscess) may result fatally.

DR. HOMER DUPUY, New Orleans: One feature alone in this paper would, in my opinion, give it monumental value, and it is that the cerebrospinal findings postoperatively can give us some index as what is going on along the line of drainage. We may diagnose and localize a cerebral abscess, and then comes the question of drainage; and even an Eagleton or a Mosher, I am sure, will agree that we have not yet perfected our technic in regard to the drainage of cerebral abscess. We are really antipodal as to what should be done. If cerebrospinal puncture will give us prompt evidence of what is going on around the wound, in other words, inform us of a possible latent meningitis which may lead to a fatal issue in eight or ten days after a successful operation, I think it is a most important contribution.

DR. C. F. YERGER, Chicago: Dr. Eagleton is quite right as to the danger that we have to contend with in the cases in which we have a blood stream infection, as in a lateral sinus thrombosis; but if we are cognizant of this fact and utilize the smallest quantity of cerebrospinal fluid consistent with making a diagnosis, we shall avoid the production of a meningitis. In too many cases, we neglect making a lumbar puncture and an examination of the cerebrospinal fluid when in justice to the patient and ourselves this should be done when indicated for diagnostic or therapeutic purposes. The point emphasized by Dr. Dupuy about the examination of the cerebrospinal fluid as an index of the clinical course of the case after operation is important and is one of the main points of my paper. It is one of the requisites of good brain surgery to know just what is going on in the brain after operation, and this is the only method that I know of through which we can obtain this control.

11. Yerger, C. F.: Acute Toxic Meningo-Encephalitis of Otorhinogenic Origin, Arch. Otolaryngol. **1**: 198 (Feb.) 1925.

DIABETIC RETINITIS *

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The teaching of Hirschberg concerning the retinal manifestations of diabetes early impressed me with the peculiar affection in the central region of the retina, consisting of small, bright, white spots with fine hemorrhages, the retinitis centralis punctata diabetica. Soon after the publication of Hirschberg's [1] paper in 1890, I [2] reported a case of this kind, and it has been my habit, in practice, to look on these findings as suggestive of diabetes. This is, indeed, the view generally accepted, and almost every publication since 1890 dealing with this subject quotes Hirschberg's description. This is the course that has also been followed by Leber [3] in his work on "Diseases of the Retina," and by Dimmer.[4]

The probable dependence of this form of retinitis, as well as others, on primary vascular changes led Wilbrand and Saenger [5] to discard the name retinitis and substitute for it "angiopathy of the retina." They state that "inflammatory and degenerative conditions in the retinal vessels are intermixed, and since the retinal hemorrhages, edema with clouding of the retina and whitish yellow spots are to be regarded as the results of these inflammatory and degenerative processes, there

* Read before the Section on Ophthalmology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

1. Hirschberg: Deutsch. med. Wchnschr. **16**: 152, 1890; Centralbl. f. Augenh., 1891, pp. 18, 51, 68.
2. Friedenwald, Harry: Arch. Ophth. **20**: 544, 1891.
3. Leber, in Graefe-Saemisch: Handbuch, Ed. 2, **7**: 951, 1914.
4. Dimmer: Der Augenspiegel, 1921, p. 381.
5. Wilbrand and Saenger: Pathologie der Netzhaut, in Neurologie des Auges **4**: 235, 337, 1909.

are no definite ophthalmoscopic pictures to correspond with definite general diseases." Concerning angiopathia retinae diabetica, they state that it is in no wise to be distinguished from that of general angiosclerosis, but the star figure of the nephritic form is scarcely ever present.

An interesting study by Wagener and Wilder,[6] of 300 cases of diabetes at the Mayo Clinic, showed that forty-four had positive ophthalmoscopic findings, as shown in Table 1.

TABLE 1.—*Ophthalmoscopic Findings in Diabetes*

Ophthalmoscopic Diagnosis	Cases	Age	
		Below 40	Above 40
Hypertension arteriosclerosis	13	..	13
Arteriosclerotic retinitis	2	..	2
Central puncture retinitis	2	..	2
Diabetic hemorrhagic retinitis	9	..	9
Vascular hemorrhagic retinitis	2	..	2
Diabetic albuminuric retinitis	8	..	8
Albuminuric retinitis	2	..	2
Total	38	..	38
Atypical cases:			
Inactive chorioretinitis	1	1	..
Hyperemia of optic disk	1	1	..
Optic neuritis	1	..	1
Pigmentary retinitis	1	..	1
Retinal edema	2	..	2
Total	6	2	4

It will be seen from Table 1 that only twenty patients had retinitis, and that of these only two had the central punctate form which Hirschberg regards as typical.

I must add that it has long been known that central punctate retinitis is not pathognomonic of diabetes, but that, as Foster Moore [7] has so well shown, it is likewise found in cases of arteriosclerosis uncomplicated either by albumin or by sugar.

For the purpose of gathering my own experiences, I have studied the notes of all my cases [8] of diabetes with retinal lesions, as well as those cases in which retinitis punctata centralis has been found without evidence of diabetes. It was hoped in this way to estimate the relative frequency of the various forms of retinal disease in diabetic patients, especially of the central punctate form, and the frequency with which this form is found in cases without sugar in the urine, and, finally to determine the justification of the term diabetic retinitis, as Hirschberg and others who have followed him have applied it.

It is, however, with some hesitation that I venture this publication. I realize that it would be desirable to have studied the cases in the light of our newer views on the varied forms of hypertension, vascular disease and disturbance of kidney function, and I realize, too, that my records suffer from the fact that the general physical examinations were made by many persons of varied training, and indeed from all the defects of office practice and record. In spite of this, I hope that the results are not without interest.

Group 1 embraces twenty-three cases of diabetes with retinitis in the absence of nephritis, in patients ranging from 34 to 80 years of age, twelve men and eleven women. All but three showed retinitis punctata centralis, for the most part of the typical form with fine hemorrhages. In no cases were large hemorrhages found, but in one there was retinitis proliferans which may have developed from such hemorrhages. In two the spots are noted as being arranged in lines; in one like circinate retinitis, and in two as forming large confluent patches. In two cases a few diffuse spots of indefinite outline were found. The last case is included though it greatly resembled the senile condition, not infrequently found without diabetes. In one case there was iritis, in one, toxic amblyopia, and in one paralysis of accommodation.

Central vision varied from perfect vision to a high grade of impairment. Other ocular complications noted were cataract, toxic amblyopia and iritis, each one case. The condition of the retinal vessels is noted as showing sclerotic changes in several cases, but the absence of any visible change is noted in two.

The ages of the patients is in accord with those in other reports that have been published, with the exception of Patient 1, who is one of the youngest on record. The absence of profuse hemorrhages is in marked contrast with the observation of Foster Moore [9] and others. This subject will be referred to again under Group 4. The absence of neuritis is noteworthy and is in agreement with Hirschberg's findings. The most conspicuous fact, however, is the great frequency of the "typical form" of retinitis punctata centralis, as described by Hirschberg.

Group 2 comprises sixteen cases of retinal disease associated with diabetes and nephritis, the patients ranging from 46 to 83 years in age; nine men and seven women. All but three presented retinitis punctata centralis. In one only was there some blurring of the outlines of one disk, and in this eye there were some exudates. Exudates like those of nephritic retinitis were found in two cases. In two cases there were many conglomerate white spots. Retinitis proliferans was found in two patients, the youngest of the series. Chronic glaucoma developed in two cases, facial paralysis in one, and hemiplegia in one.

Group 3 comprises eighteen cases in which retinitis punctata centralis was found without diabetes, nine showing evidences of nephritis, the other nine without such signs. In most cases the punctate retinitis was quite like that found in Group 1. In some of these the blood pressure was high (systolic more than 175); and in all but two there was a note of general or retinal arteriosclerosis or both.

Patients in Series A ranged from 47 to 78 years of age; those in Series B ranged from 45 to 71. In the former, one showed mild optic neuritis; one case presented a "hole in the macula." In Series B, one showed radial lines in the macula; one, cotton wool spot; one, thrombosis of the retinal vein in one eye; one presented blurred disks, and one developed a paralysis of the external rectus.

It is interesting to note that in one case (Case 43), the picture of retinitis punctata centralis in all respects identical with the typical form described above was seen to develop out of a hemorrhagic retinitis following a thrombosis of a branch of the central retinal vein.

It cannot but be regarded as remarkable that with the frequency of retinal vascular changes due to arteriosclerosis, retinitis punctata centralis has been noted in only eighteen cases of arteriosclerosis without diabetes, while, as Groups 1 and 2 show, it was found associated with senile diabetes in thirty-three cases. It is generally recognized that arteriosclerosis of high degree is frequently associated with senile diabetes. Many have stressed this fact in recent years and attribute the retinal lesions primarily to the vascular changes. Hirschberg

6. Wagener, H. P., and Wilder, R. M.: The Retinitis of Diabetes Mellitus, J. A. M. A. **76**: 515 (Feb. 19) 1921.
7. Moore, Foster: Quart. J. Med. **10**: 3, 1916-1917.
8. These cases were only those seen in private practice, and since the publication of the paper referred to at the beginning of the paper.
9. Moore, Foster: Medical Ophthalmology, London, 1922, p. 166.

himself stated in his original paper that "they may perhaps depend on disease of the finest blood vessels." It appears to me that until further pathologic studies discover the relation of the vascular changes to the retinal lesions, and especially the order of vessels affected, we shall not be able to advance safely beyond Hirschberg's dictum in 1890.

The last group of cases is that in which hemorrhages without retinitis were found in cases of diabetes in Series A without evidence of nephritis, and in Series B, with nephritis. In six patients of Group A, aged from 47 to 69, the hemorrhages were small, but in one there was retinitis proliferans. Amblyopia with central scotoma was present in two (one used tobacco freely); one developed cataract, one hemianopia, and one iritis. Series B, three cases, presented small hemorrhages in two and extensive hemorrhages in one.

Extensive hemorrhages, it is seen, were found in but one case, in a patient, aged 66, presenting marked evidences of nephritis. My experience, therefore, as stated above, is very different from that of those who find that diabetes tends to massive intra-ocular hemorrhages.

One case deserves detailed description because of its unusual character.

Mr. M. R. (Patient 2, Group 1), aged 41, seen, Sept. 18, 1924, had always been nearsighted. About six months before, black spots had appeared before his eyes, and they had gradually grown worse. He attributed the onset of the trouble to severe constipation, but stated that diabetes had been discovered. He had had several treatments with insulin. A blood sugar test two months before had been found normal.

The patient was wearing glasses from the prescription: R E $-0.75 = -1.75 \times 95$ V 19/19; L E $-1.0 = -1.5 \times 85$ V 19/15. The external examination of the eyes showed subconjunctival hemorrhages near the cornea. The ophthalmoscopic examination revealed: In the right eye a large mass of convoluted blood vessels, projecting forward from the nasal side of the excavation of the disk and for a distance of about 4 diopters. In the macular region there was one small oval hemorrhage with a diameter about the size of an artery of the first order. Further to the temporal side there were numerous punctate hemorrhages extending far out in the superior temporal region; also, some punctate hemorrhages near the inferior temporal vessels, which were very small. A few minute punctate hemorrhages were seen in the upper and lower nasal half of the retina. In the temporal region there were a large number of small, bright, white spots. The vitreous was fairly clear. There were some peripheral lenticular opacities. In the left eye, three masses of convoluted blood vessels extending from a meshwork of vessels in the disk into the vitreous. In this eye

TABLE 2.—*(Group 1) Diabetes Without Nephritis*

Patient	Age	Condition	Vision	Comment
1. Mrs. M. G.	34	Retinitis punctata centralis; small patch near macula made up of minute and conglomerate white spots; no hemorrhages	6/6 alm.	Patient under insulin treatment; had marked paresis of accommodation six weeks before retinitis was discovered; cardiovascular examination negative; urine: occasional albumin, never casts
2. Mr. M. R.	41	Retinitis punctata centralis; retinal hemorrhages; newly formed vessels convoluted in masses on disks		Blood pressure, 140/80; Sugar, 3 per cent.
3. Mr. J. Y.	48	Retinitis punctata centralis; no note as to hemorrhages	20/200	Diabetes for four years
4. Mr. J. B. F.	48	Retinitis punctata centralis; fine hemorrhages in both eyes	Perfect	Diabetes
5. Mr. G. S.	50	Retinitis punctata centralis	20/12 20/48	Diabetes
6. Mr. M. L.	54	Retinitis punctata centralis; small hemorrhages; very white spots and lines; a few diffuse spots	6/12	Diabetes; cataract; no casts; died 3½ years later
7. Mrs. A.	54	Retinitis punctata centralis; mild with fine hemorrhages; retinal arteriosclerosis	20/15	Blood pressure, 180; diabetes
8. Mr. J. M.	57	Retinitis punctata centralis; mild form; fine hemorrhages	Perfect	High blood pressure; diabetes
9. Mrs. R.	58	Retinitis punctata centralis; punctate hemorrhages	20/76	Diabetes; died about 3 years later
10. Mr. E. G. C.	58	Retinitis punctata centralis; fine hemorrhages; only a few in left eye	20/48 20/38	Blood pressure, 148/100; blood sugar, 0.240
11. Mrs. J.	58	In center, conglomerate white spots; one large patch; blood vessels appear normal; punctate hemorrhage	22/100	Sugar 4 per cent.; high blood pressure
12. Mr. B.	about 60	Retinitis punctata centralis; fine hemorrhages; later, few diffuse spots	6/60 6/24	Diabetes; toxic amblyopia; heavy smoker
13. Mr. B.	62	Retinitis punctata centralis; no note as to hemorrhages		Diabetes
14. Mrs. K.	62	Retinitis punctata centralis; typical fine hemorrhages; some also on nasal side; vessels show few abnormalities	20/20 20/70	Diabetes; diabetic gangrene; examined again 3½ years later; little change
15. Mrs. S.	64	Retinitis punctata centralis; small hemorrhages	6/22 6/12	Diabetes for four years
16. Mrs. B.	64	Retinitis punctata centralis and hemorrhages; few in one eye like retinitis circinata; marked retinal arteriosclerosis		Diabetes
17. Mrs. L.	65	Retinitis punctata centralis; fine hemorrhages	Almost perfect	Diabetes; Wassermann reaction ++
18. Mr. D.	69	Retinitis punctata centralis; retinal arteriosclerosis	20/24 20/24	Diabetes; iritis
19. Mr. L.	69	Retinitis punctata centralis; retinal hemorrhages; streaks not arranged in star form	Markedly defective	Diabetes for twenty-three years
20. Mrs. D.	74	Retinitis punctata centralis; typical and fine hemorrhages; retinitis proliferans (hemorrhagic ?); marked retinal arteriosclerosis	20/200 20/30	Diabetes
21. Mrs. H.	75	Retinitis punctata centralis; punctate hemorrhages in central retinal region	20/19 20/60	Diabetes of long standing; blood pressure, 190; later trace of albumin and occasional casts
22. Mr. B.	78	Cataract incipient (especially left); hemorrhages in retinal lower quadrant; some hazy cottonwool spots	20/20 20/19	High blood pressure (200); sugar, 3-4 per cent.; specific gravity, 1.030
23. Mrs. F.	80	Degenerative chorioretinitis senilis; large number of white spots confluent like diabetes, but probably senile; a few months later distinct pigment disturbance and pigment formation; recurrent hemorrhage; white spots became confluent; few fine white spots suggestive of diabetes in the right eye; fine hemorrhages and some connective tissue formation in the left eye	20/24; central scotoma	Mild diabetes

there were likewise fine punctate hemorrhages scattered throughout the retina and a number of small white spots in the temporal half of the macular region.

A physical examination was made. The blood pressure was 140 systolic and 80 diastolic. The urine contained about 3 per cent. of sugar, with a blood sugar of 0.227 per cent. The urine was otherwise negative. The kidney function phenolsulphonephthalein test showed 40 per cent. for the first hour and 25 per cent. for the second, giving a total of 65 per cent. A roentgenogram showed a disturbance of the liver and intestinal stasis. He was advised to undergo hospital treatment, but was called to his home in another state.

TABLE 3.—*(Group 2) Diabetes With Nephritis*

Patient	Age	Condition	Vision	Comment
24. Mrs. F.	46	Retinitis punctata centralis; large hemorrhage from disk down; veins full and tortuous; also hemorrhage in vitreous; proliferans retinitis; marked vascular changes	6/12 6/6	Albumin, 0.08 per cent.; sugar, none; facial paralysis; three years later, diabetes with 3 per cent. sugar
25. Mr. L.	46	Retinitis punctata centralis; left frequent retinal hemorrhages; retinitis proliferans; vitreous opacities (hemorrhagic ?)	.....	Diabetes for years with constantly increasing albuminuria; died in two months
26. Mr. J. C.	50	Scattered white spots, very many; macula free; few hemorrhages	20/121 20/152	Incipient cataract; diabetes and albumin; blood pressure, 175/80; chronic nephritis
27. Mr. M. F.	50	One whitish mass; blurred outline	.....	Cardiorenal disease for ten years; primary syphilitic infection; transient glycosuria; blood pressure, 150-155; B. V. show no changes; patient died ten years after condition was found
28. Mr. H.	53	Retinitis punctata centralis; in the right eye the optic disk clear; retinal arteriosclerosis; some white spots in retina; a few fine hemorrhages; left eye, optic disk blurred; extensive changes; some whitish plaques	20/38 20/30	Diabetes; cardiac disturbance; no albumin now but has had it; sugar, which is under control; chronic glaucoma
29. Mr. B. G.	56	Retinitis punctata centralis; fine hemorrhages	20/60 20/30	Diabetes; blood pressure, 170/80; chronic interstitial nephritis
30. Mrs. J. L. S.	57	Retinitis punctata centralis; many small hemorrhages	Not 20/192	Retinitis discovered after cataract extraction; enlarged heart; arteriosclerosis; blood pressure, 200/120; positive albumin and sugar; occasional hyaline and granular casts
31. Mr. L.	58	Retinitis punctata centralis; fine hemorrhages	20/48	Diabetes for years; lenticular opacities; sugar, 2-4 per cent., and trace of albumin and casts
32. Mr. L. F.	59	Retinitis punctata centralis; right, slight; left, marked	6/15 both eyes	Diabetes and chronic interstitial nephritis; apoplectic attack ten weeks before causing left hemiplegia
33. Mr. M. L.	59	Retinitis punctata centralis; numerous punctate hemorrhages; marked perivasculitis	.....	Diabetes mellitus; arteriosclerosis; chronic interstitial nephritis; blood pressure, 190/90; cataract extraction; slight reduction to sugar; a few hyaline casts
34. Mrs. B.	60	Retinitis punctata centralis; fine hemorrhages	4/18 4/36	Diabetic gangrene and albumin; incipient cataract; later glaucoma, corneal ulceration and loss of eye
35. Mr. A.	65	Retinitis punctata centralis; no note as to hemorrhages	.....	Diabetes for five years; hemiplegia; general arteriosclerosis; chronic nephritis; albumin and a few hyaline casts; blood pressure, 160/90
36. Mrs. G.	68	Retinitis punctata centralis; fine hemorrhages; no marked arterial changes	1/10 3/10	Diabetes, 4 per cent.; albumin; blood pressure, 180/80
37. Mrs. P.	71	Retinitis punctata centralis; no note as to hemorrhage	20/60	Diabetes for a number of years; albumin, casts and high blood pressure
38. Miss W.	71	Retinitis punctata centralis; confluent white spots around fovea; hemorrhages	6/45	Sugar, 10 per cent., and albumin; lenticular opacities; died 1½ years later
39. Miss H.	83	Right eye normal disk; exudates in central region like those in nephritic retinitis, especially one on temporal vessels; small hemorrhages; left eye, conglomerate white mass covering entire macula, surrounded by hemorrhages; in periphery, colloid excrescences; disk pale	.....	Nephritic diabetes; high blood pressure

TABLE 4.—*(Group 3 A) Retinitis Punctata Centralis Without Diabetes; High Blood Pressure and Arteriosclerosis; No Nephritis*

Patient	Age	Condition	Vision	Comment
40. Mrs. A.	47	Retinitis punctata centralis in only one eye; beginning retinal arteriosclerosis	8/8	Neither sugar nor albumin
41. Mr. E.	52	Retinitis punctata centralis	6/6 6/6	Neither sugar nor albumin; observed three months; improved
42. Mrs. L. G.	52	Retinitis punctata centralis; fine hemorrhages and mild neuritis; marked retinal arteriosclerosis	6/12 6/6	Marked general arteriosclerosis; no diabetes or albumin
43. Mrs. J. F. P.	56	Retinitis punctata centralis; thrombosis superior temporal vein, with hemorrhages covering an area twice the size of the disk and a number of grayish spots; a year later clusters of small intensely white spots occupied the same region lying deep in the retinal tissue; marked retinal arteriosclerosis	Marked central scotoma at first, which disappeared, leaving almost normal vision	Very high blood pressure
44. Mrs. A.	58	Retinitis punctata centralis, but not in the center; vascular changes marked	20/19 20/24	Arteriosclerosis; high blood pressure; no diabetes
45. Mrs. C.	60	Very fine dots and lines in macula; hole in macula; no hemorrhages; later punctate hemorrhages appeared; retinal arteriosclerosis	High hyperphoria; vision good	Blood pressure, 180/110; no albumin or sugar
46. Mrs. I.	64	Retinitis punctata centralis; small hemorrhages	20/15 20/60	No sugar or albumin; blood pressure, 190; arteriosclerosis; slight cardiac hypertrophy; slight dilatation of aorta; no evidence of myocardial or renal involvement
47. Mrs. P.	65	Retinitis punctata centralis; fine hemorrhages; retinal arteriosclerosis	20/90	Blood pressure, 180
48. Mr. M. C.	?	Retinitis punctata centralis; retinal arteriosclerosis	20/200 20/200	Moderate arteriosclerosis; diastolic murmur; enlarged liver; blood pressure, 175/110; enlarged heart; no albumin or sugar
49. Mrs. M. H.	78	Retinitis punctata centralis; flame shaped hemorrhages in both eyes	20/48 20/200; marked reduction of vision in last 6 months	Marked arteriosclerosis; high blood pressure

Two somewhat similar cases are on record. Nettleship [10] described the case of a man, aged 48, who had had diabetes for from two to three years. One eye had lost its vision from iritis and secondary glaucoma; the other was affected with retinitis, complicated by hemorrhages, and by the formation of blood vessels in the vitreous.

Table 5.—*(Group 3 B).—Retinitis Punctata Centralis Without Diabetes; High Blood Pressure and Arteriosclerosis, With Nephritis*

	Patient	Age	Condition	Vision	Comment
50.	Mrs. D.	..	Retinitis punctata centralis; moderate hemorrhages	6/45	Traces of albumin; no diabetes
51.	Mrs. O.	..	Retinitis punctata centralis and albuminuria; mild neuritis; tortuous veins; a few white spots on macular side of disk; one small hemorrhage; arteriosclerotic changes; in other eye, macular region studden with white spots, some in lines; few punctate hemorrhages; nasal side of retina covered with fine points	.....	High blood pressure (over 235); small amount of albumin; no sugar; this condition is evidently of the same type as Moore's picture
52.	Mr. W.	45	Retinitis punctata centralis; small hemorrhages...	20/24 20/19	Blood pressure, 200/100; hyaline and granular casts; no albumin or sugar
53.	Mrs. R.	60	Retinitis punctata centralis in lines; radial lines in macula and one cotton wool exudate	20/20 20/70	Chronic nephritis; hypertension; no sugar
54.	Mrs. B. B.	61	Retinitis punctata centralis; punctate hemorrhages; retinal arteriosclerosis	.....	Arteriosclerosis; hypertension; nephropathy (trace of albumin); obesity; no sugar
55.	Dr. F.	65	Retinitis punctata centralis; numerous hemorrhages and white spots scattered through retina; thrombosis of retinal vein; retinal arteriosclerosis	20/100	Chronic nephritis; arteriosclerosis; albumin and casts; no sugar
56.	Mr. G. B. F.	65	Retinitis punctata centralis; right eye, optic disk blurred; veins irregular and tortuous; some little whitish spots in center; left eye much the same; white spots in macular region, more pronounced; media clear; disks show 2 diopters of swelling; some white spots on nasal side of disk; few small hemorrhages; fine arteries show high grade of sclerosis	16/30 16/30	Marked nervous symptoms; urine shows no albumin or sugar; blood pressure, 235/40; chronic interstitial nephritis
57.	Mr. J. C.	67	Retinitis punctata centralis; disks blurred; optic nerve atrophy; transient paralysis of external rectus	.....	Blood pressure, 198/160; interstitial nephritis; trace of albumin; specific gravity, 1.014
58.	Miss K.	71	Retinitis punctata centralis; fine hemorrhages.....	20/48 20/24	Blood pressure, 220/240; slight trace of albumin; diagnosis, chronic contracted kidney

Table 6.—*(Group 4 A) Retinal and Vitreous Hemorrhages in Diabetes Without Nephritis*

	Patient	Age	Condition	Vision	Comment
59.	Mrs. A. S.	47	Thrombosis of superior temporal branch of retinal vein of left eye	.....	Diabetes; Wassermann reaction ++++
60.	Mrs. P.	49	Retinitis proliferans; marked vascular disease....	Less than 20/100	
61.	Mrs. L. S.	60	Fine retinal hemorrhages and vitreous opacities; marked retinal arteriosclerosis	.....	Tobacco amblyopia; cataract extraction
62.	Mr. M. S.	65	Punctate hemorrhages in retina.....	Partial homonymous hemianopia	
63.	Mrs. W.	66	Diabetic amblyopia 1¼ years later; retinal hemorrhages in both eyes	.....	Died suddenly two years later
64.	Mrs. G.	69	Two retinal hemorrhages; very fine.....	8/18 8/30	Incipient cataract; old iritis; fresh iritis

Table 7.—*(Group 4 B) Retinal and Vitreous Hemorrhages in Diabetes With Nephritis*

	Patient	Age	Condition	Vision	Comment
65.	Mrs. B.	(about 55)	Fine hemorrhagic spots.....	6/12 6/36	Diabetes for twelve years; also albumin
66.	Mrs. A. B.	..	Retinal hemorrhage in both eyes.....	.....	Diabetes and chronic nephritis; chronic myocarditis; died a few months later
67.	Mrs. E.	66	Extensive hemorrhages in both retinas; one large, extending into vitreous	6/30	Sugar, 3.5 per cent.; albumin, 0.1 per cent.

Over the whole of the central region, the retina was edematous and hazy, in some parts densely cloudy; near the yellow spot were some densely opaque yellowish white clumps of deposit; the retinal veins were considerably distended, and in various parts there were a few scattered blood spots. Close to the fovea centralis, two or three vessels of medium size suddenly appeared in the retina; they could not be followed to the right eye, but had every appearance of springing from the choroid directly into the retina. The largest of them (seen at its apparent emergence from the choroid with + 2.5 diopters), followed upward and outward, was found to divide into a network of minute vessels, which projected forward in the form of fine loops into the vitreous, where the most prominent of them were seen with + 6 diopters; on a few of these loops an appearance of small swellings, perhaps capillary aneurysms, could be distinctly seen.

Lawson [11] described the case of a man, aged 54, with diabetes of three and one-half years' standing, in whom new connective tissue appeared as feathery tufts issuing from a central stalk—richly permeated with blood vessels.

These are the only cases that I have been able to find. But it must be noted that the total number of cases with newly formed blood vessels jutting into the vitreous is not large. In 1901, Marple gathered fourteen, including the two cited, to which four of Hirschberg's must be added, and few have been published since that time. It is striking that the cases cited bear a great similarity. All were in men in middle life.

10. Nettleship: Tr. Ophth. Soc. U. K. **8**: 159, 1888.

11. Lawson: Tr. Ophth. Soc. U. K. **19**: 288, 1899.

CONCLUSIONS

1. Diabetic patients developing retinitis generally present the punctate form which is most marked in the region between the superior and inferior temporal vessels, but may extend to other parts of the retina. The spots are usually small, but may coalesce into lines or even large masses. They are usually accompanied by fine hemorrhages. The optic disks are of clear outline; there are no signs of retinal edema, and ill defined "cotton wool" spots are rarely found. Other conditions —thrombosis of the retinal vein, retinitis proliferans and profuse hemorrhages—are of rare occurrence.

2. Retinitis punctata centralis was found in thirty-three cases with diabetes, and in eighteen without diabetes, of which latter, nine showed evidences of nephritis. At most, only nine cases could therefore be certainly classified as arteriosclerotic retinitis. The view of Foster Moore that this form of retinitis is primarily due to arteriosclerosis would lead us to expect to find it frequently, much more frequently without diabetes than with it, because of the vastly greater number of arteriosclerotic patients who are free from diabetes than those who suffer from it. But as seen in the foregoing series, quite the opposite is the case, diabetes being found almost twice as often as absent. Nor does this take account of the fact that the cases classed as "non-diabetic" were not examined as to blood sugar, and in many of the cases a single examination had to suffice. Hirschberg and others have found retinitis punctata centralis in cases in which no sugar was found at the first examination, and it required repeated examinations to discover it. Again, this does not take into account the well known fact that in old cases of diabetes, traces of sugar may be lost after nephritis has become established.

The view is justified, therefore, that retinitis punctata centralis, while not pathognomonic of diabetes, is indicative of this etiologic basis. When found in the presence of diabetes, or even of diabetes with nephritis, it may with propriety be designated as diabetic retinitis.

3. Others have stressed the appearance of profuse retinal hemorrhages in diabetes. The foregoing cases do not bear this out. The retinal hemorrhages found are generally punctate. Abundant hemorrhages are rare.

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ABSTRACT OF DISCUSSION

DR. T. B. HOLLOWAY, Philadelphia: This subject is one of increasing interest, and much investigation may still be carried on before we can arrive at a thoroughly satisfactory conclusion. As to the type of fundus changes noted in diabetes, do these occur singly or in groups in such a way as to warrant the diagnosis of diabetes? I believe that most of us who have been associated with large general hospitals have seen the types described by Hirschberg, with the possible exception of the questionable cases with pigmentation and contraction of the fields.

As to thrombosis of the retinal vein, I have never seen a case that I would attribute to diabetes, and I can recall but one case of proliferative retinitis and this was associated with nephritis. I have never seen a massive hemorrhage into the vitreous in one of these cases, so, naturally, I am in accord with the author that these conditions are rare.

The author has referred to various contributions concerning the possibilities of the so-called diabetic picture being dependent on the arteriosclerotic changes so frequently present in those individuals who manifest retinal changes. In this country the contribution of Wagener and Wilder has been especially noteworthy in this respect. It may be recalled that they attributed the retinitis to cardiovascular-renal disease, modified possibly by the metabolic disturbances, but that these played, at most, a secondary rôle.

I am in accord with the author that central punctate retinitis is seen more frequently in diabetes than in arteriosclerosis. Still further, most of the marked instances of this type that I have seen have been in the diabetic rather than in simple arteriosclerotic cases.

The types and the causes of the hemorrhages present in these cases are also interesting, but time permits reference only to the view of Foster Moore that they are not dependent on increased blood pressure in the retinal arteries, but to impaired nutrition in the vessel walls, to which may be added, probably in diabetes as well as in the anemias, changes in the blood itself.

Concerning the stellate figure, I question whether it occurs in diabetes without frank nephritic changes. Atypical circinate patches I have seen in several cases, but not as often as in cases of arteriosclerosis with excessive macular changes and without diabetes. Of couse, I understand the author to mean that it is not any one of these factors he has cited that points to what we might regard as a diabetic picture, but the grouping or association of the various signs he has enumerated. The importance of blood sugar findings is now thoroughly appreciated.

DR. G. E. DE SCHWEINITZ, Philadelphia: So-called central punctate diabetic retinitis is the form of retinal disease most suggestive of diabetes; but, even so, the question is still open whether this manifestation is due solely to the diabetes or to an association of retinal angiosclerosis and diabetes, and except that the term is too cumbersome, "retinitis" or "retinal disease associated with diabetes" is more accurately descriptive of the conditions usually found. These, in my experience, in addition to the so-called central punctate diabetic retinitis, include the exudative form of retinitis characterized by widespread areas of yellowish-white exudation, probably due to the coalescence of small white spots, the lesions often arranged in zonelike areas above and below the macula, or else massed in the central retinal area. Smaller white exudations are scattered elsewhere in the retina, and hemorrhages are not infrequent; retinal angiosclerosis is conspicuous. I have seen several cases of this character as a late manifestation of diabetes; they might be associated with gangrene, carbuncle, hemiplegia and other serious complications of this disorder. I have also observed a number of cases of diabetes in which hemorrhages in the retina were extensively produced, in several instances followed by proliferating retinitis. Thrombosis of the central vein of the retina may occur, not, of course, alone as a diabetic lesion, but as a condition induced by vascular disease in a diabetic patient. Indeed, as had been stated, these hemorrhagic manifestations might be regarded as conditions for which the diabetes was a predisposing but not a direct cause. I have twice seen in diabetic patients central punctate hemorrhagic retinitis in one eye, and thrombosis of the central retinal vein in the other.

DR. H. S. GRADLE, Chicago: Ever since the first description of retinitis in a diabetic patient by E. Jager, in 1855, various forms of the condition have been described, but the majority of writers accept the classification given by Hirschberg in 1887. In 1869, H. D. Noyes described the first case of retinitis in a diabetic patient without nephritic complication. Since then well over a hundred cases have made their appearance in the literature. All this again brings up the question, Is there such a clinical entity as diabetic retinitis, or is the retinitis that is found so frequently in diabetic patients merely the result of nephritis or cardiovascular disease? So far there has not been presented any positive evidence that will allow of a definite decision. If retinitis is present in a diabetic patient in whose urine there is albumin, it is impossible to determine from the clinical picture presented by the retina whether the retinal lesion is due to the diabetes or the nephritis. But if retinitis is present in a diabetic patient in whose urine there is no albumin, can it be said that the retinitis is due to the diabetes and can the presence of a mild nephritis with the absence of albumin discernible by the usual gross tests be ruled out? I do not think so. In none of the hun-

dred or more cases of retinitis in diabetic patients without albumin in the urine have there been made the phenolsulphonephthalein tests for kidney insufficiency, the accurate determination of the blood chemistry, capillary microscopy, or elimination of vascular hypertension. Moschowitz has shown that evidence of kidney involvement may precede actual nephritis, and such evidence may be manifest by retinal changes and alteration in blood chemistry. Are there any cases of diabetic retinitis without albumin in the urine that have not eventually developed nephritis? For the last year or more, we have been studying every case of diabetes that has come into the Cook County Hospital. A hasty compilation of the data obtained so far shows that 24.8 per cent. of all these cases show some retinal lesions more severe than a mere retinal hyperemia. Nine of the cases of retinitis proved to be of the type described by Hirschberg as Class 1, characteristic of diabetes, or the so-called retinitis centralis punctata diabetica. Five of the nine patients had albumin in the urine, as shown by the routine clinical urinalysis.

It is true that there are clinical and statistical arguments in favor of the existence of a diabetic retinitis. On the other hand, the existence of a nephritis in diabetic patients with a retinitis has never been disproved, and until such an exhaustive examination has been undertaken in a fairly large number of cases, the question must be regarded as still open.

DR. W. H. WILDER, Chicago: I must confess that the number of cases of retinitis occurring in diabetes that I have seen is comparatively meager; but, so far as my observation goes, it seems to me that there is no such thing as a clinical picture of diabetes of the retina. We can probably attribute the findings to a more or less accidental distribution of the hemorrhages and the patches of exudate, depending on the vessels that happen to be involved and the degree of their involvement. My own experience seems to be in accord with the observations of the men in the Mayo Clinic who have had the opportunity of studying the retinal changes in large numbers of cases of diabetes and who found in many of them sclerotic vessel changes not unlike those seen in so-called nephritic retinitis. The picture in the eyeground will depend on the degree and extent of the arteriosclerotic change in the retina. One eye only may be affected, or the vessels of one part of the retina may be atheromatous, and others may not be affected to a degree sufficient to allow hemorrhages or cause exudates. Of course, if the vascular changes are very extensive we may get the familiar picture that is so classic of albuminuric retinitis. Naturally, we should expect to get all sorts of gradations according to the degree of involvement of the vessels. Whether or not there is anything in diabetes to cause a peculiar distribution of the hemorrhages or exudates in the retina is the question at issue, but it would seem more reasonable to explain them on the ground of vascular changes which we know from observation are more or less irregular and haphazard in their distribution.

DR. E. E. HOLT, Portland, Maine: One of the earliest signs of diabetes is the development of heterophoria of such a nature as to produce diplopia at times. In same of the cases I have referred the patient back to the family physician to search for the several causes of such disturbances and he would report back that he could find none. Later on diabetes developed, so that diabetes comes into my mind when the muscular disturbances develop suddenly.

DR. HARRY FRIEDENWALD, Baltimore: I wish to call the attention of Dr. Wilder to the fact that I emphasized in the paper the importance of the arteriosclerotic changes and that Wagener and Wilder did not study 300 cases of diabetic retinitis, but 300 cases of diabetes, many of which were complicated with nephritis. In that series they found only about twenty-five cases with retinitis, including what they described as albuminuric retinitis, and also cases of hemorrhagic retinitis. The importance of the underlying arteriosclerosis I believe is not disputed by any one, but I do not believe that that alone explains the situation such as I have described—that in the course of years looking for these cases, I have found this condition almost twice as often in cases of diabetes than in cases in which no diabetes was discovered.

THE PRECIPITIN REACTION OF FIBRINOGEN *

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The various fibrinogens used in our experiments were prepared [1] as follows:

Four parts of the clear plasma obtained by centrifugalization of oxalated blood are mixed with one part of saturated solution of ammonium sulphate; the precipitate is removed by centrifugalization or by straining through washed cheesecloth, depending on its state of division, and then washed with one or two changes of 20 per cent. saturated ammonium sulphate solution, and finally dissolved in a 2 per cent. solution of pure sodium chlorid, which solution is then filtered. A second precipitation is made by adding one part of saturated ammonium sulphate solution to five parts of the 2 per cent. sodium chlorid solution; the precipitate is again separated as indicated, washed, and redissolved in 2 per cent. sodium chlorid solution. At least four precipitations are made in this way in all cases. If there is any indication of a positive benzidin test in the last solution, further precipitations are made until the solution no longer reacts with benzidin.

Precipitin Reaction of Diverse Fibrinogens

Fibrinogens	Antifibrinogen Precipitin Serums							Normal Rabbit Serum
	Beef	Chicken	Dog	Horse	Human	Sheep	Swine	
Beef.....	150,000	0	400	60,000+	3,000+	3,000+	2,000+	0
Chicken...	0	20,000	0	0	0	0	0	0
Dog.....	80,000	0	40,000	1,000	+	0	0	0
Horse.....	40,000	0	1,000	70,000+	0	1,000	2,000+	0
Human...	60,000	0	500	500	16,000	1,000	6,000	0
Sheep.....	30,000	0	0	500	0	24,000	6,000	0
Swine.....	50,000	0	0	16,000	0	8,000	60,000	0

The figures give the highest dilutions of the fibrinogen solutions that showed precipitate at plane of contact with undiluted antiserum after one hour at room temperature. The dilutions were made with 0.9 per cent. salt solution.

Rabbits were immunized by intravenous injections at intervals of three days with increasing quantities of solutions of fibrinogen which varied in strength from 1:50 up to 1:3,000. In most instances, the quantities were 2, 4, 6, 8, 8 and 10 c.c. As a rule, the serum was found to be fairly rich in precipitin on the fourth day after the fifth or sixth injection; in a few cases, additional injections were given in the hope of increasing the precipitin content of the serum. The beef, dog, human and horse fibrinogens as a rule did not give reaction for the corresponding hemoglobin or blood proteins in tests of the solutions with precipitin serums; in the case of chicken, sheep and swine fibrinogens, such tests were not made.

The results of the precipitin tests by the layer or contact method, read after one hour at room temperature, show that the precipitin serums for fibrinogen may have considerable potency, as shown in the accompanying table. The figures indicate approximately the highest dilutions in 0.9 per cent. salt solution of the fibrinogen solutions in which definite reactions developed after contact for one hour with undiluted anti-

* From the Hygienic Laboratory, U. S. Public Health Service, Washington, D. C., and the Laboratory of Physiological Chemistry, College of Medicine, University of Illinois.

1. Howell, W. H.: Harvey Lectures, 1916-1917, p. 273. McLean, J. Bull. Johns Hopkins Hosp. 31:453 (Dec.) 1920.

serums. In most cases the antiserums did not contain precipitin for the corresponding blood serum or serum proteins except possibly in traces; in one serum against beef fibrinogen and in one against swine fibrinogen, the specific serum precipitins in each reached a titer of 1:1,000; the serum against chicken fibrinogen reacted with chicken serum, 1:8,000. The table also shows that the fibrinogen precipitins are not species-specific in the strict sense, as in every instance except the antiserum for chicken fibrinogen there was action on heterologous fibrinogens. So far, no interaction has been noted between antiserum for mammalian fibrinogen and chicken fibrinogen or vice versa, but further observations are necessary before any definite conclusion can be drawn.

The different quantitative relations of the mammalian fibrinogens to the various antiserums indicate clearly that there are differences as well as similarities in these fibrinogens. This is shown also by the results of preliminary absorption tests. Experiments with antiserum for swine fibrinogen, in which the serum was mixed in each case with an equal part of a solution of fibrinogen from 1:200 to 1:800 in strength, and the resulting precipitate removed by centrifugalization, resulted in the removal of the corresponding precipitin, leaving the precipitin for swine fibrinogen in nearly its original strength or more or less reduced. It was found further that absorption with beef fibrinogen would remove the precipitin for beef and also for human fibrinogen and vice versa, and that absorption with sheep fibrinogen removed the precipitin for sheep and also for beef and human fibrinogens. Further experiments of this kind must be made, however, in order to reach conclusive results.

When fibrinogen solutions and precipitin serums for fibrinogen stand in the icebox for weeks, their precipitin reactions tend to become more narrowly species-specific; in other words, certain precipitinogens and precipitins appear to be lost after a time.

While antifibrinogen serum may not react with normal serum (except perhaps with the homologous as in the case of beef, swine and chicken fibrinogen precipitins), the results with mammalian plasma in fully controlled tests are quite the opposite. Citrated plasma has been used, prepared by mixing one part of blood with two parts of 2 per cent. sodium citrate solution in 0.9 per cent. salt solution. Besides the plasma from the mammals already enumerated (except beef), goat, guinea-pig, rabbit and rat plasma has been tested with the antifibrinogen serums used in this work. In most instances prompt reactions took place; dog, horse, human and swine plasma responding best with all the antiserums. Rabbit plasma, when fresh, appeared to react slightly with all the antifibrinogens, except chicken, but the results proved difficult to read on account of clotting. Guinea-pig and rat plasma did not react with human or swine antifibrinogen. The chicken antifibrinogen serum gave doubtful traces of reaction only with human and swine plasma. The results of the precipitin tests with plasma confirm and extend the observations that there are closely related or identical antigenic elements or properties in mammalian fibrinogens; it also is shown by these results that fibrinogen, as it exists in the plasma, has the antigenic properties of the purified substance.

In addition to the reaction of rabbit plasma with antifibrinogen, purified rabbit fibrinogen also may react with the serum of rabbits immunized with alien fibrinogen. This raises the question whether the rabbit can produce precipitin on injection of its own fibrinogen. As it can produce precipitin in response to rabbit lens protein [2] and rabbit thyroglobulin,[3] it seems reasonable to expect that it will respond to rabbit fibrinogen also.

Bauer and Engel [4] studied the immune reactions of beef and swine fibrinogens prepared by Heubner's modification of Hammarsten's method. They report that complement fixation showed individual and species-specificness and that the precipitin test gave similar results with some overlapping. Further review of the literature, including Davide's [5] recent work on the action of antifibrinogen serum on red corpuscles, is reserved for a later report.

SUMMARY

The fibrinogens of beef, chicken, dog, horse, human, sheep and swine blood are precipitinogenic. The enumerated mammalian fibrinogens, to which may be added those of the goat, guinea-pig, rabbit and rat, have antigenic elements or properties that are more or less common to all of them. Consequently, fibrinogen is not necessarily wholly different for each species, as seems to be the case with serum proteins and hemoglobin, but to varying extent the same in different species, resembling in this respect casein, lens proteins, and to some extent thyroglobulin, and the principle of strict species-specificness does not hold in the precipitin reaction of mammalian fibrinogen. The specificness of chicken fibrinogen invites further study.

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Clinical Notes, Suggestions, and New Instruments

EXTREME LEUKOPENIA IN LOBAR PNEUMONIA *

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A. S., a man, aged 34, whose past general health has been good, was a liberal consumer of alcoholic beverages. Five days before admission to the hospital, following an alcoholic spree, he developed a chill, pain in the right chest, fever, and a cough productive of "black or brown" phlegm. These symptoms continued, and the bowels did not move in the four days prior to admission.

The patient was markedly dyspneic and acutely ill, with cyanotic face and extremities. The lips were dry, the tongue was coated, and the pharynx was congested. Over the right lower lobe, there were typical signs of consolidation. The size of the heart was normal, but the rhythm was irregular as a result of numerous extrasystoles. The abdomen was soft, and the liver and spleen were not felt.

During the twenty-two hours in which the patient was observed, the temperature ranged between 104 and 105 F. and the pulse rate between 120 and 130 beats per minute. The respirations were 52 per minute on admission and fell to 40 just before death. The patient became irrational about six hours after admission, and comatose twelve hours later. He developed a rigid neck, rigid abdomen, tache cerebral and questionable Kernig's sign, but the knee and ankle jerks remained normal. The spinal fluid was clear, sterile and under normal pressure. A blood culture taken a few hours before death showed about 400 colonies of pneumococci per cubic centimeter of blood.

The five leukocyte counts that I made are shown on the accompanying table. In order to eliminate a technical error,

2. Hektoen, Ludvig; and Schulhof, Kamil: J. Infec. Dis. 34: 433 (May) 1924.
3. Unpublished observation.
4. Bauer and Engel: Biochem. Ztschr. 42: 399, 1912.
5. Davide, Hans: Acta Medica Scandinavica, Suppl. 13, 1925.

* From the Second (Cornell) Medical Division, Bellevue Hospital, New York.

the diluting solution (0.5 per cent. acetic acid) was checked by performing counts on other persons. The smears stained by Wright's method showed a great scarcity of white cells, the large majority of those found being lymphocytes with no abnormal red or white cells. The patient died twenty-two

Leukocyte Counts

Hours After Admission	Leukocytes Per C.Mm.	Differential	Erythrocytes	Hemoglobin
8	150	95% lymphocytes	.....	....
8¼	350	5% polymorphonuclears	.....	....
9	200	.....	.....	....
16	200	Same	5,792,000	95%
20	275	.....	.....	....

hours after admission. Permission for a necropsy could not be obtained. Confirmation of this blood picture was made by Drs. Maurice Richter, A. L. Wincor and H. G. Holder.

COMMENT

Naegeli,[1] in a review of the literature on the subject, states that a relative leukopenia (under 10,000 cells) occurs in from 5 to 10 per cent. of the cases of lobar pneumonia, and that such cases always present a bad prognosis. He calls attention not only to patients in whom there is no leukocytosis, but to less common instances of actual leukopenia. Samuels and Lambert,[2] who also review the literature, suggest that one of the explanations for persistently low leukocyte counts in acute lobar pneumonia lies in the previous injury to the bone marrow by chronic alcoholism. The lowest count in 582 lobar pneumonia patients studied by Chatard[3] was 2,500. The present case shows the most extreme degree of leukopenia that could be found in the recent literature.

There was nothing except the leukopenia in this case to suggest that the patient was suffering from an acute stage of leukemia, associated with the pneumonia.

DEODORIZATION OF PATHOLOGIC SPECIMENS PRESERVED IN SOLUTION OF FORMALDEHYD*

JAMES C. WHITE, M.D., BOSTON

The formaldehyd gas that arises from pathologic specimens that have been preserved in solution of formaldehyd is irritating to the average person's eyes, nose and hands. A method for neutralizing the disagreeable fumes is here reported.

The agent is ammonia, which combines readily with formaldehyd to form the nonirritating compound hexamethylenamin.

$$4\ NH_3 + 6\ CH_2O = (CH_2)_6\ N_4 + 6\ H_2O.$$

The procedure is as follows: The formaldehyd preserved material is first rinsed in water, followed by a brief dip in a solution of very dilute ammonium hydroxid. The latter is made up by adding from 5 to 10 c.c. of strong ammonia water (28 per cent. NH_3 with a specific gravity of 0.9) to the liter of tap water. The mixture smells very faintly of ammonia, but it will completely deodorize formaldehyd saturated tissues, which ordinarily are very disagreeable to handle. I first tried out this method while cutting sections of brains hardened in solution of formaldehyd. Microscopic slides cut from these specimens show no crystalline deposits of hexamethylenamin nor any defects in taking the ordinary stains, and the deodorized tissues can be subsequently returned to the formaldehyd solution for further preservation.

This method was first tested under the supervision of Dr. W. G. MacCallum in the pathologic department of the Johns Hopkins Hospital and is now being employed by Dr. H. F. Hartwell at the Massachusetts General Hospital for the deodorization of pathologic specimens in the course on surgical pathology.

1. Naegeli, O.: Blutkrankheiten und Blutdiagnostik, Ed. 4, Berlin, Julius Springer, 1923, p. 489.
2. Samuels, S. S., and Lambert, R. A.: Relationship of the Leukocyte Count and Bone Marrow Changes in Acute Lobar Pneumonia, J. Infect. Dis. **23**: 443-448 (Nov.) 1918.
3. Chatard, J. A.: The Leukocytes in Acute Lobar Pneumonia, Johns Hopkins Hosp. Rep. **15**: 89-98, 1910.

* From the West Surgical Service of the Massachusetts General Hospital.

A CASE OF "HEMORRHAGIC ENCEPHALITIS" TREATED WITH SODIUM THIOSULPHATE*

MARTIN LASERSOHN, M.D., RICHMOND, VA.
Instructor in Medicine, Medical College of Virginia

McBride[1] recently reported a case of hemorrhagic encephalitis treated with sodium thiosulphate. In this report the author states that "nowhere has been noted the use of sodium thiosulphate in the condition spoken of as "hemorrhagic encephalitis." Another case of the same condition treated with sodium thiosulphate, with unfortunately not the result that was noted in McBride's case, is here reported. In this case, as in McBride's, the "encephalitis" followed sulpharsphenamin injection.

REPORT OF CASE

J. A., a white man, aged 33, was brought, March 17, 1925, to the hospital division in a semiconscious state. The history was obtained from the patient's private physician, who stated that he had treated the patient prophylactically for syphilis. The physician stated that he had treated the patient's wife for syphilis prior to her marriage, that she had had a miscarriage four months before her marriage, and that her blood Wassermann reaction was strongly positive. He advised her husband to come to him for examination on learning from her of her marriage. The husband came for examination, and it was found that his physical condition was excellent, and that his blood Wassermann reaction was negative; but because of the history and condition of his wife, the physician advised some antisyphilitic treatment for him. The physician stated that he then gave the husband 0.4 gm. of sulpharsphenamin intravenously. There was no reaction, and the patient returned one week later for a second dose. This time he was given 0.5 gm. of sulpharsphenamin intravenously. There was no immediate reaction. The next day the patient complained of general aching and headache. His temperature was 99 F., and pulse rate 90 a minute at the time of the physician's call. The next day the patient told the physician that he felt about the same, and the day following this he stated that he felt somewhat better; that evening, however, the patient refused his supper, took to bed, and about one hour after this had a convulsion. He was then sent by ambulance to the hospital.

On admission, the patient was semi-conscious and in a profuse sweat. The skin almost everywhere showed great numbers of bluish spots varying in size from a pinhead to several centimeters; these appeared to be real hemorrhages. Examination was very difficult because of the extreme restlessness of the patient; it was thought, however, that the lungs and the heart sounds were normal. There was good motion of the arms and legs. Further examination was impossible.

The patient was given ¼ grain of morphin by the intern, and though very restless at times, had no convulsions during the night and stayed in bed. The next morning the patient was extremely restless and very difficult to control, at times talking at random. The subcutaneous hemorrhages had increased in number, the skin now having bluish spots in every area; in addition, a subconjunctival hemorrhage in the right lower eyelid was noted. At 10:30 a. m., March 18, 10 c.c. (1 gm.) of sodium thiosulphate was injected intravenously. One hour later the patient had a severe, generalized convulsion lasting about one minute, following which the patient was deeply unconscious. At 1:30 p. m. there was another convulsion; following this convulsion another gram of sodium thiosulphate was injected. Ophthalmoscopic examination at this time showed the disk margins to be well outlined and the blood vessels normal. No hemorrhages or exudate were seen. A spinal puncture was done at 2 p. m. The fluid appeared clear and colorless and the pressure read at 22 mm. of spinal fluid. The pressure was reduced to 10 mm. and the needle withdrawn.

The laboratory findings, March 18, were: hemoglobin, 90 per cent.; red blood cells, 4,500,000 per cubic millimeter; white blood cells, 16,400; differential count: neutrophils, 89 per cent.; small and large lymphocytes, 11 per cent. Blood smears appeared normal. The blood coagulation time was five minutes. The blood Wassermann reaction was negative. Examination

* From the Department of Internal Medicine, Medical College of Virginia, Hospital Division.

1. McBride, R. H.: Treatment of Arsphenamin "Encephalitis" with Sodium Thiosulphate, J. A. M. A. **84**: 729 (March 7) 1925.

of the spinal fluid revealed hundreds of red blood cells per low power field. The cells appeared round with central acromia. There were very few crenated cells. The guiaic test for blood was markedly positive. The Wassermann reaction was negative. A catheterized specimen of urine showed some albumin (trace), no casts, an occasional epithelial cell and hundreds of red blood cells per low power field. The guiaic test was markedly positive.

At 4:30 the patient was seen again and appeared to be much worse. He had had eight convulsions during the afternoon and was now in deep coma. He was given another gram of sodium thiosulphate intravenously. The only other therapy given was 15 grains of chloral hydrate by rectum at 2:45 p. m. and 500 c.c. of physiologic sodium chlorid solution at 2 p. m. and again at 4:20 p. m. At 4:30 p. m. the last convulsion occurred and at 5:30 p. m. the patient died. Permission for necropsy was not obtained.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

PITUITARY EXTRACT OBSTETRICAL-MERRELL.—A slightly acid aqueous solution containing the water-soluble principle or principles of the fresh posterior lobe of the pituitary body of cattle, preserved with 0.5 per cent. of chlorbutanol. It is standardized so that 1 Cc. has an activity on the isolated uterus of the virgin guinea-pig corresponding to not less than 80 per cent. and not more than 120 per cent. of that produced by 0.005 Gm. of standard, defatted, dried, powdered, posterior lobe of pituitary gland of cattle.

Actions and Uses.—See Pituitary Gland, New and Nonofficial Remedies, 1925, p. 260.

Dosage.—From 0.25 to 1 Cc. (4 to 16 minims).

Manufactured by The Wm. S. Merrell Company, Cincinnati. No U. S. patent or trademark.

Ampoules Pituitary Extract Obstetrical-Merrell, 0.5 Cc.
Ampoules Pituitary Extract Obstetrical-Merrell, 1 Cc.

PITUITARY EXTRACT SURGICAL-MERRELL.—A slightly acid aqueous solution containing the water-soluble principle or principles of the fresh posterior lobe of the pituitary body of cattle, preserved with 0.5 per cent. of chlorbutanol. It is standardized so that 1 Cc. has an activity on the isolated uterus of the virgin guinea-pig corresponding to not less than 80 per cent. and not more than 120 per cent. of that produced by 0.01 Gm. of standard, defatted, dried, powdered, posterior lobe of pituitary gland of cattle.

Actions and Uses.—See Pituitary Gland, New and Nonofficial Remedies, 1925, p. 260.

Dosage.—From 0.25 to 0.5 Cc. (4 to 8 minims).

Manufactured by The Wm. S. Merrell Company, Cincinnati. No U. S. patent or trademark.

Ampoules Pituitary Extract Surgical-Merrell, 1 Cc.

SOLARSON.—A 1 per cent. solution of ammonium heptenchlorarsonate ($CH_3(CH_2)_4CCl:CH.AsO.OH.ONH_4$), rendered isotonic by the addition of sodium chloride. Solarson contains from 0.255 to 0.275 Gm. of arsenic (As) in 100 Cc.

Actions and Uses.—In experiments on rabbits the toxicity of solarson, computed on the basis of its arsenic content, was found to be somewhat less than that of arsenic acid (H_3AsO_4) when given intravenously or subcutaneously; in dogs it was about the same. Repeated daily subcutaneous injections of an amount of solarson equivalent to 0.002 Gm. arsenic per kilogram was well tolerated by rabbits. An experiment on a dog showed that after the subcutaneous administration of a dose of solarson corresponding to 0.02 Gm. arsenic, the urine collected for twenty-four hours after the injection contained 0.0052 Gm. of arsenic and the feces in forty-eight hours 0.0012 Gm.: this is taken to show that the arsenic of solarson is readily liberated in the system and is well utilized. It is claimed that solarson has an advantage over the cacodylates, in that its arsenic is better utilized, and over the arsenilates in that subcutaneous and intramuscular injections produce less pain and are less liable to produce toxic effects.

Solarson is used as a means of obtaining arsenic effects in the treatment of anemia, chlorosis, malaria, neuroses and dermatoses.

Dosage.—From 1 to 2 Cc. subcutaneously or intramuscularly.

Manufactured by the Bayer Co., Inc., Rensselaer, N. Y. (Winthrop Chemical Co., Inc., New York, distributor). U. S. patent 1,201,692 (Aug. 17, 1916; expires 1933). U. S. trademark 110,626.

Solarson Ampules, 1.2 Cc.

Solarson is prepared by neutralization of heptenchlorarsonic acid with ammonium hydroxide and dilution with sufficient water to produce a 1 per cent. solution of ammonium heptenchlorarsonic acid; sufficient sodium chloride is added to render the solution isotonic.

The heptenchlorarsonic acid used in the preparation of solarson responds to the following tests: It melts at 114 to 115 C. and contains 29.21 per cent. of arsenic (As).

To determine the arsenic content of solarson, treat about 1 Gm. of solarson, accurately weighed, with 5 Cc. of arsenic-free nitric acid and 5 Cc. of arsenic-free sulphuric acid. Boil the mixture until white fumes appear; allow to cool and add 50 Cc. of water and boil for five minutes. Allow the liquid to cool and make it up to 100 Cc. with distilled water. Add 50 Cc. of this liquid in portions to a generating marsh apparatus. Collect the arsenic in a weighed arsenic tube 15 Cm. long, heated to redness in two places and cooled in two other places by water-soaked wicks. Continue the collection of the arsenic for six hours, cool the arsenic tube and weigh it. The arsenic found in the solarson is not less than 0.255 Gm. nor more than 0.275 Gm. per hundred cubic centimeters.

BISMOSOL.—A solution of potassium sodium bismuthotartrate (containing 35 per cent. bismuth [Bi]) 10 Gm.; piperazine, 0.3 Gm., in an aqueous solution of glucose, 100 Cc.

Actions and Uses.—Bismosol is proposed as a means of obtaining the systemic effects of bismuth in the treatment of syphilis (see Bismuth Compounds, New and Nonofficial Remedies, 1925, p. 73).

Dosage.—Bismosol is administered intramuscularly in doses of 1 Cc. every two to seven days until twenty doses have been given. After an intermission of one month, a second course may be given.

Manufactured by Powers-Weightman-Rosengarten Co., Philadelphia, by license of Les Etablissements Poulenc Freres, Paris. No U. S. patent. U. S. trademark 196,017.

Bismosol Ampules, 1 Cc.

Bismosol is a pale yellow, syrupy liquid. On adding diluted hydrochloric acid, drop by drop, to bismosol, a gelatinous precipitate is formed which redissolves on further addition of the acid; the resulting solution yields a brownish black precipitate when saturated with hydrogen sulphide. On evaporation and ignition, bismosol yields an alkaline residue which effervesces with acids.

To 1 Cc. of bismosol add three drops of acetic acid, a few drops of solution of hydrogen dioxide, one drop of ferrous sulphate solution and then an excess of sodium hydroxide solution: a purple violet color is produced. To 1 Cc. bismosol add diluted hydrochloric acid drop by drop, until the precipitate which is formed has redissolved, and then add a few cubic centimeters of potassium bismuth iodide solution: a brilliant red precipitate is produced.

To 5 Cc. bismosol add about 100 Cc. water and sufficient hydrochloric acid to redissolve the precipitate first formed; heat the solution to from 70 to 80 C. and saturate with hydrogen sulphide to precipitate completely the bismuth as bismuth sulphide. Collect the bismuth sulphide on a tared Gooch crucible, wash successively with water, alcohol, carbon disulphide and alcohol; dry to constant weight at 110 C. The weight of bismuth sulphide is equivalent to 3.5 Gm. of bismuth (Bi) in 100 Cc. of bismosol.

CAPROKOL (See THE JOURNAL, May 2, 1925, p. 1338).

The following dosage form has been accepted:

Caprokol (Hexylresorcinol-S. & D.) 2½ per cent. Solution in Olive Oil.

SAJODIN (See New and Nonofficial Remedies, 1925, p. 182).

The following dosage form has been accepted:

Sajodin Tablets 1 Grain.

SCARLET FEVER STREPTOCOCCUS ANTITOXIN (See THE JOURNAL, May 2, 1925, p. 1338).

Parke, Davis & Co., Detroit.

Scarlet Fever Streptococcus Antitoxin Concentrated Globulin-P. D. & Co.—It is prepared from the serum of horses treated with subcutaneous injections of toxic filtrate from cultures of scarlet fever streptococci, and also with intravenous injections of the streptococci themselves. Each cubic centimeter neutralizes from 35,000 to 40,000 skin test doses of scarlet fever toxin.

Marketed in packages of one syringe containing 2½ Cc., and in packages of one syringe containing 10 Cc.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, AUGUST 8, 1925

THE LATEST CANCER PARASITE

The daily press has been flooded for a few weeks with discussions of length and with headlines of excitement concerning another "cancer germ." Cautious physicians, interviewed on the topic, avoided positive statements, as they need must because of the lack of adequate information concerning the real facts that had been reported by Dr. Gye and Mr. Barnard. The *Lancet* has now reached this country with the preliminary report of the new research.[1] The scientific statements are preceded by this unusual editorial introduction:

> The two communications which follow mark an event in the history of medicine. They form a detailed description of a prolonged and intensive research into the origin of malignant new growths, and they may present a solution of the central problem of cancer.

The *Lancet's* prejudgment of medical history is hardly in keeping with the modest claim that "they may present a solution," and gives the impression that some one may have become excited. Briefly, the result of the new research is this: Some fourteen years ago Peyton Rous of the Rockefeller Institute was studying a transplantable spindle cell growth which arose in a fowl, and discovered to his surprise that filtrates of these tumors, even after being made cell-free by filtration through Berkefeld filters, would regularly produce the same sorts of growths in suitable fowls. Up to that time successful transfer of tumors from one animal to another had been accomplished only by means of actual grafting of living tumor cells, which then proceeded to grow on the host which served as a culture medium, but which did not provide the tumor cells themselves. Rous also found that cells of these chicken growths, presumably killed by drying or by keeping in glycerin, would produce new growths when injected into fowls. It was subsequently learned that these observations could be repeated with other connective tissue tumors from fowls, and this has now been done several times. The work of Rous was conducted most carefully, with full controls and with the most scrupulous avoidance of making any claims not well inside the observed facts. It established beyond doubt that in fowls there occur growths, resembling in every essential respect typical sarcomas as they occur in man and in other mammals, due to some filtrable "agent" (Rous in his admirable scientific conservatism avoided calling the agent a parasite or even a "virus") which persists in dead and dried cells but which is readily destroyed by heat and various antiseptics.

Striking as this contribution is, however, it has not served to establish that cancer is caused by a specific parasite, for numerous reasons which have seemed adequate to most investigators of cancer problems. The first difficulty is that this demonstration of a filtrable virus has been accomplished only with these few sarcoma-like growths of fowls. Innumerable attempts to accomplish a similar isolation of a cancer-producing agent from the tumors of mammals have always failed, and there is no established instance of an unquestionable mammalian tumor ever having been transferred from one animal to another except by transplanting living tumor cells. The fact that chickens react to a certain agent, which may well be a specific living virus, by producing a connective tissue overgrowth similar to a sarcoma, is far from establishing that cancer is generally caused by a specific infecting agent. We know little about the pathology of fowls, but what we do know indicates a capacity to produce such connective tissue growths readily enough from other causes than injection of a living virus. Murphy and Landsteiner have produced such growths by injecting tar into fowls,[2] and although these growths resembled the "sarcomas" studied by Rous, no filtrable virus could be obtained from them. That is to say, even in fowls such growths do not necessarily depend on a specific cancer virus.

It is with these fowl tumors that Gye has been working chiefly; that is, with a condition long known to be produced by a filtrable agent resembling in behavior a living virus, and in this essential respect different from any known cancers of man or other mammals.[3] This fact must be kept clearly in mind.

Dr. Gye has confirmed many of Rous' findings, and seems to have shown that the active agent in the growth is capable of multiplication in a special medium under anaerobic conditions. He also has conducted some experiments which he interprets as indicating that the virus alone cannot produce the disease, but requires the presence of some other agent, probably a chemical substance, which is contained in the new growths. The virus is invisible by ordinary microscopic study, but by using the well known method of photography by ultra-

1. Gye, W. E.: The Etiology of Malignant New Growths, Lancet **2**: 109 (July 18) 1925. Barnard, J. E.: The Microscopical Examination of Filterable Viruses Associated with Malignant New Growths, ibid., p. 117.

2. Recent Progress in the Experimental Production of Cancer, editorial, J. A. M. A. **84**: 1918 (June 20) 1925.

3. There is a specific infectious granulomatous disease of canines, transmitted by coitus and strongly contagious, which bears a histologic resemblance to lymphosarcoma.

violet rays (not a new discovery as the press accounts proclaimed), Mr. Barnard has demonstrated the presence of spheroidal forms which are believed to be the infective agent, but, as far as we can see, without any proof that this is the case. As Barnard himself says: "Unless considerable care is exercised, the spheroids may easily be confused with other spherical bodies occurring in most organic fluids." Certainly the presence of such spheroidal bodies in a culture medium is far from a demonstration that they are a specific virus causing a disease, and if the authors have controlled their findings by inoculation of mediums with tissues, normal and diseased, and not from cancer, we have failed to find mention of it.

Although similar ultramicroscopic spheroidal bodies were found in materials from mouse sarcoma and human carcinoma, in no case have other observers succeeded in producing true neoplasms in mammals by injection of such cell free filtrates. Gye believes that this is because the chicken tumors are peculiar in being exceptionally richly supplied with the unknown, hypothetic chemical substance that is supposed to be necessary to permit the living virus to act. He describes a few experiments in which growths have been produced in fowls by injecting an inactive filtrate from fowl tumors to which had been added human carcinoma and rat and mouse tumors. But no mammalian tumors have been produced in this way, and so the positive results really concern only a disease in fowls which characteristically differs from mammalian sarcoma and carcinoma, and even from fowl carcinoma as far as this has been studied, in being readily produced by some agent separable from the tissue cells. Certainly, this is far from the discovery of the specific germ of cancer. Gye's own conclusions are expressed in the following words:

> These researches have led me to look upon cancer—using the term in its widest sense—as a specific disease caused by a virus (or group of viruses). Under experimental conditions the virus alone is ineffective; a second specific factor, obtained from tumor extracts, ruptures the cell defenses and enables the virus to infect. Under natural conditions, continued "irritation" of tissues sets up a state under which infection can occur. The connection between the specific factor of a tumor and an irritant remains to be investigated. Some of the relatively unimportant "irritants" are known, such as coal tar, paraffin oils, etc. The virus probably lives and multiplies in the cell and provokes the cell to continued multiplication.

The critical reader of the reports in the *Lancet* obtains the impression that an intricate hypothesis has been developed on a small number of facts, and that if on reinvestigation by others new facts should be discovered, the hypothesis will collapse. In view of the weighty and abundant evidence that the production of cancer does not depend on or require a specific cancer germ, and that some forms of malignant growths can scarcely possibly be produced by infection (e. g., complex malignant teratoid neoplasms arising in the fetus in utero), it will require much more proof and repeated corroboration of these observations before it will be demonstrated that all cancer is caused by a "cancer germ," either with or without some chemical accessory agent.

THE BRITISH MEDICAL ASSOCIATION—CONGRATULATIONS!

On July 13 the British Medical Association, founded in 1832, opened its new home in London, with ceremonies fitting to the occasion, attended by the king and queen of England and by many other notables, including delegates from most of the British colonies and from the American Medical Association. At the same time, the Archbishop of Canterbury dedicated memorial gates to the grounds, erected as a tribute to 574 British physicians, members of the association, who died in the Great War.

In 1878 the British Medical Association undertook to print its own periodicals and occupied its first home. In 1886 the increase in its membership and the circulation of its journal permitted the leasing of larger offices, and as recently as 1908, following its reorganization in 1902, it moved to its third home, familiar to many Americans, at 429 The Strand. One of the chief reasons for occupying its present new home was to provide a hall for large meetings of the delegates and for smaller conferences. The present home includes, in addition to offices for the three departments, a spacious library, a general conversation room for members, a council chamber, numerous committee rooms, and a hall capable of seating 500 persons. It is surrounded by spacious grounds, including a central garden and another garden, which is a fine example of landscape architecture, centering about a pond. In securing this establishment, the British Medical Association was extremely fortunate, since it took over a structure originally begun for another purpose, taken over later by the government for war purposes and acquired by the British Medical Association through the disposals board of the War Department. The buildings were originally planned to house a religious organization, which was unable to complete the work. The building covers 18,000 square feet and has a total floor space of 50,000 square feet. It is occupied by the general offices of the association, including the publishing, subscription and advertising offices on the first floor; there are accommodations for the finance department and the staff of the medical insurance agency on its second floor, for the editorial staff on the third floor, and for the printing departments on the fourth floor. Other wings contain the committee rooms, the secretarial offices and the other halls that have been mentioned.

Much significance attaches to attendance of the king and the queen at the opening of the new home. The king, in his response to the address of the chairman of

the council of the British Medical Association, heartily welcomed the guests, including particularly those from the American Medical Association. He paid tribute to "the noble purpose, the character and the skill of those engaged in the art of healing," stating that he had followed with sympathy the negotiations for securing cooperation between the medical profession and the public health services.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION extends congratulations to the British Medical Association and to the *British Medical Journal* on reaching this epoch in their continuous progress. The British association has stood always for service to scientific medicine and to the public. The spirituality of this work makes all the more significant the fact that the new home should have been built originally with religious service in view.

THE FUTURE OF CHIROPRACTIC

Chiropractic is the illegitimate offspring of magnetic healing and osteopathy. According to chiropractic legend, the magnetic healer Daniel David Palmer punched the deaf janitor Harvey Lillard in the back of the neck and thus restored his hearing. So, like Eve from the rib of Adam, chiropractic was born from the back of Harvey Lillard. It is reported that D. D. Palmer had sojourned briefly in Kirksville, Mo., where he had imbibed at the spring of knowledge there maintained by Andrew Still. Chiropractic acquired its aura of mystery from magnetic healing; from its osteopathic parentage, no doubt, it derived political astuteness and financial acumen. Thus, genetically and biologically may we account for such successes as the cult has achieved in its own peculiar field of activity.

That the chiropractor would follow in the footsteps of other cultists in the endeavor to squirm his way into unrestricted medical practice became promptly apparent. It was soon urged that chiropractors employ any diagnostic or therapeutic agent that they wished provided they did not run afoul of the law. Diet, exercise and all other physical agencies were suggested to chiropractors as potent aids in replacing subluxated vertebrae. Even a "straight" chiropractor, it has been stated, may use such aids, provided only that he explains to his patient that they are not truly a part of chiropractic. By such an explanation, it is supposed, he may satisfy his chiropractic conscience and keep the chiropractic strain pure and undefiled.

More recently, further expansion of the chiropractic group has been shrewdly provided for in statutes for the licensing of chiropractors. The New Mexico act of 1921 authorized the chiropractors of the state to diagnose and treat all manner of infirmities:

> by the use of any or all methods as herein provided, such as palpating, diagnosing, adjusting and treating diseases, injuries and defects of human beings by the application of manipulative manual and mechanical means, including all natural agencies imbued with the healing art, such as food, water, heat, cold, electricity, vacuum cupping and drugless appliances, without the use of drugs or what are commonly known as medicinal preparations, or in any manner severing or penetrating any of the tissues of the human body known as surgery.

The California act of 1922 was more shrewdly drawn, in that it provided that a chiropractic license—

> shall authorize the holder thereof to practice chiropractic in the state of California as taught in chiropractic schools or colleges; and, also, to use all necessary mechanical and hygienic and sanitary measures incident to the care of the body, but shall not authorize the practice of medicine, surgery, osteopathy, dentistry or optometry, nor the use of any drug or medicine now or hereafter included in materia medica.

The Maine act of 1923 followed in a general way the California act just quoted, providing that a license to practice chiropractic

> shall entitle the person to whom it is granted to practice chiropractic in any county in this state, in all its branches as taught and practiced by the recognized schools and colleges of chiropractic, but it shall not authorize the holder to practice obstetrics so far as the same relates to parturition, nor to administer drugs or perform surgical operations with the use of instruments except as now allowed by statute.

Just how broadly the courts will construe the California and Maine chiropractic acts is not clear. By implication, the chiropractors of California may all use any drug or medicine except such as are "included in materia medica," whatever that may mean. The interpretation of the phrases, "as taught in chiropractic schools or colleges" and "as taught and practiced by the recognized schools and colleges of chiropractic," is difficult. Probably the chiropractic proponents of these laws had in mind the possibility of extending the field of their activities from time to time through the simple expedient of inducing their colleges to enlarge their curriculums. The courts, however, may construe the phrases quoted above as applying to the curriculums in effect when the acts were passed. If a decision can be postponed long enough, however, the courts may be influenced by the construction placed on these statutes by the officers charged with the duty of carrying them into effect.

The first annual report of the Board of Chiropractic Examiners of the State of California, 1923-1924, discloses the fact that any chiropractic school, in order to be in good standing and to have its graduates admitted to examination in California, must include in its curriculum the study of elementary chemistry and toxicology, 100 "hours"; bacteriology, 100 "hours," and obstetrics and gynecology, 100 "hours." An "hour" is defined as forty-five minutes "or the equivalent thereof." Once chemistry, toxicology, bacteriology, obstetrics and gynecology are established in the chiropractic curriculum, pharmacology, therapeutics and surgery will promptly follow. Then will follow the cry of chiropractic, echoing the present cry of osteopathy, for the substantially unrestricted right to enter the practice of medicine and surgery, by its own carefully planned back door.

THE PARATHYROID HORMONE—A WARNING

The experimental investigation of at least one "active principle" or hormone elaborated by the parathyroid glands seems to be attended with noteworthy success. The efforts of Hanson and of Collip, in particular, deserve commendation.[1] The recent studies of Collip and Clark[2] at the University of Alberta in Edmonton have already been carried over sufficiently long periods to make it more than likely that suitably prepared parathyroid extracts contain a substance or substances that will afford complete replacement therapy in the case of the totally parathyroidectomized dog. This demonstration is, indeed, another notable step in advance in relation to the physiology of the endocrine organs. The methods thus far developed indicate that any extract of fresh ox glands that has been made by a process of weak acid hydrolysis and is sufficiently concentrated contains more or less of the active principle. The Canadian investigators have already proposed, as a provisional unit of potency, one one-hundredth of the amount of extract that will produce an average increase of 5 mg. in the content of calcium in the blood serum of normal dogs of approximately 20 kg. of body weight, over a period of fifteen hours. This reference to changes in the composition of the blood makes the definition of the standard unit somewhat analogous to that which has been widely adopted for insulin. The one hormone mobilizes calcium into the blood stream; the other promotes the utilization of circulating blood sugar.

These endocrine hormones are attracting the interests of biochemists in unusual degree. The prize of successful isolation, so brilliantly attained in the case of epinephrin and thyroxin, still remains unawarded in the study of the pancreatic and parathyroid hormones. Abel and Geiling have recently made some progress in the concentration and purification of insulin; and Collip and Clark have already secured the parathyroid product in more purified, concentrated and stable form than ever before. It may be well at this time to preclude undue haste in the possible human applications of this hormone by pointing to some manifest dangers. Injections of even very small amounts of potent extract repeated at intervals of a few hours into either normal or thyroparathyroidectomized animals have invariably proved fatal when the injections were continued. Such results were due to long maintained hypercalcemia induced in the first place by the pyramiding of the effect of each successive injection on the preceding one. As a general rule, however, hypercalcemia is without ill effect if the condition is not maintained. Unfortunately, no satisfactory antidote has yet been found to offset the fatal issue.

In uniformity with what has been observed for other tissue extracts, the purified extracts of the parathyroid cause a slight fall in blood pressure after intravenous injections. Subcutaneous administration, unless massive doses are used, has little or no immediate effect on blood pressure. Hypercalcemia can be induced by the use of the parathyroid hormone even in a fully anesthetized animal. There appears, under any condition, to be a definite limit to the degree of calcium mobilization possible in the blood, the highest concentration (in the dog) being about 20 mg. per hundred cubic centimeters of blood. The blood phosphorus shows very little fluctuation during the period of calcium increase; but when a marked hypercalcemia is developed the phosphorus may increase progressively. It is thus obvious that an agency of marked and decidedly unique potency has been placed in the hands of the investigator. What the clinician may do with it remains to be seen.

1. The Parathyroid Hormone, editorial, J. A. M. A. **84**: 1499 (May 16) 1925; The Parathyroid Hormone—Retrospect and Prospect, ibid. **85**: 118 (July 11) 1925.
2. Collip, J. B., and Clark, E. P.: Further Studies on the Physiological Action of a Parathyroid Hormone, J. Biol. Chem. **64**: 485 (June) 1925.

Current Comment

HELIOTHERAPY AND THE BLOOD OF TUBERCULOUS ADULTS

Enthusiasm for new accomplishments in medicine may often lead to unwarranted expectations. This is, of course, only an illustration of the tendency to generalize on the basis of a few data of limited application. Consequently, those who are concerned with the healthy progress of therapy must continually be watchful lest the announcement of some novel procedure lead to its hasty recommendation in fields in which its application has no real warrant on the basis of scientific evidence. This does not mean that experiment with the new is never justified; on the contrary, it is precisely by this method that advances sometimes arise. A test, however, should always be undertaken with full realization that its potentialities are still hypothetic rather than fully demonstrated. There is now available convincing indication that the sun's rays or equivalent radiations within the range of the ultraviolet rays may exercise a stimulatory or regulatory influence on the metabolism of calcium and phosphorus under the pathologic conditions encountered in rickets and allied disorders. These present a state in which the level of the content of these elements in the circulating blood has been lowered. There has long been a belief that in the tuberculous person there may be some involvement of the element calcium in the unusual processes going on. Calcium has been supposed, for example, to assist in the formation of tubercles as a part of the healing process. Recent trials of Howe and Medlar[1] to determine the effect of intensive quartz lamp therapy on the blood of tuberculous adults have failed to show any effect on the calcium or phosphorus content. In fact, there was no evidence of abnormal metabolism of these

1. Howe, M. G., and Medlar, E. M.: The Calcium and Inorganic Phosphorus Content of the Blood Serum in Tuberculosis: Observations on Patients Undergoing Alpine Lamp Treatment, Am. Rev. Tuberc. **10**: 408 (Dec.) 1924.

elements. It is not denied that radiant energy may be of great benefit in some cases; but the explanation of possible clinical advantage must be sought elsewhere than in the increased "mobilization" of calcium and phosphorus.

THE LOS ANGELES TIMES AGAIN

At various times THE JOURNAL has called attention to the extensive gallery of medical fakes and fads that have appeared in the advertising pages of the Sunday magazine section of the Los Angeles *Times*. The same section of this newspaper carries and has carried for many years a department entitled "Care of the Body." It was and is essentially quackish in character and violently opposed to scientific medicine. For a long time this department was conducted by Harry Ellington Brook, a chiropractor and "drugless" faker who secretly exploited a "patent medicine" and defrauded the public in its sale. Brook died in May, 1924, and shortly after his death the government issued a fraud order against the swindle that he had been conducting for many years. The department "Care of the Body" undoubtedly attracts to the advertising pages of the *Times* a rich assortment of quacks and faddists. Presumably, therefore, the department was much too valuable a one from a business point of view for the *Times* to abandon at Brook's death. It is now carried on by one Philip M. Lovell, who, like Brook, places the letters "N.D." after his name, meaning, presumably, "Nature Doctor." Incidentally, Lovell's name appears in the Los Angeles telephone directory for 1924 as a "physician and surgeon," but does not appear under the tabulation, "chiropractor," "osteopath," "naturopath," etc. It might be well for the telephone company of Los Angeles to be a little more careful in the compilation of its data. A Los Angeles physician now sends us some pages from the magazine section of the Los Angeles *Times* for July 26. Lovell, in the "Care of the Body" department, has a brief article on "Medical Publicity" in which he deals with the bulletins on such subjects as health, child rearing and diet issued by the United States government. Lovell then makes this statement:

> The health bulletins issued as free publicity propaganda by the various Washington departments are nothing more than unpaid-for educational propaganda under the government and supervision of the American Medical Association. Putting it in clearer language, the government health bulletins are written by and under the supervision of the American Medical Association, the regular, orthodox, bug-juice-squirting, tonsil-clipping, adenoid-dissecting, political-power-seeking clique of doctors who have control over the health administration of our public institutions.

This farrago of falsehoods is run by the Los Angeles *Times*, although it is unthinkable that its editors believe a word of it. One wonders whether the news and editorial departments of the *Times* are equally unreliable and undeserving of credence.

State Director of County Health Service.—In the state health agency there should be a state director of county health service, who should be preferably the assistant state health officer, with administrative charge of the organization and maintenance of county health departments.—Parran, Thomas, Jr.: *Pub. Health Rep.* **40**:986 (May 15) 1925.

Association News

THE DALLAS SESSION

Time and Place of the Seventy-Seventh Annual Session

The Board of Trustees of the American Medical Association has unanimously decided on April 19-23, 1926, as the date for the Seventy-Seventh Annual Session of the Association, to be held in Dallas, Texas.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Move Against Illegal Practitioners.—Five members of the Etowah County Medical Society, Gadsden, filed a complaint in circuit court, July 15, seeking to prevent F. C. McLosky, a chiropractor, from further practice. This move is said to be part of a state-wide campaign against all kinds of irregular practitioners. Last month quo warranto proceedings were filed against M. R. Ferguson, Attalla, who, it is reported, claims to be a "sarcologist."

ARKANSAS

Missouri Pacific Health Train.—A twenty-four day health educational campaign was begun, July 20, when the Missouri Pacific health special arrived at Fort Smith. About 400 people in this small city heard the lectures and saw the exhibits, most of which are being used in a campaign to control malaria. Among those with the train at various times were the secretary of the Arkansas State Board of Health, Dr. Charles W. Garrison; Dr. Theodore Freedman, assistant district surgeon; Dr. Paul F. Vasterling, chief surgeon, and Dr. Charles S. Holt, division surgeon, for the Missouri Pacific.

CALIFORNIA

Changes in Health Officers.—Dr. Roscoe C. Main, health officer of Monterey County, has taken over the public health administration of the cities of Monterey and Pacific Grove, both of which are included now in the county health unit. Dr. Main's address will be at Salinas.——Dr. Smith McMullin, Yuba City, has been appointed health officer of Sutter County, to succeed Dr. William L. Stephens, Meridian.——Dr. F. W. Townsend, Loyalton, has been appointed health officer of Sierra County, which office has been vacant since the departure of Dr. Albert O. Eckhardt to the Pribilof Islands.——Dr. H. S. Gordon has been appointed health officer of Perris, to succeed Dr. Daniel W. Sheldon.

COLORADO

Society News.—Surg. Gen. Merritte W. Ireland, U. S. Army, addressed the Denver Medical Society, June 26.——Dr. Allen K. Krause, associate professor of medicine, Johns Hopkins University Medical Department, Baltimore, recently gave a series of lectures in Denver on "Tuberculosis."

Research in Tuberculosis.—The Colorado Foundation for Research in Tuberculosis, which was recently established with Dr. Gerald B. Webb, Colorado Springs, as research director, has already an endowment fund of $100,000 and has been pledged the income from another $100,000 for the ensuing year (THE JOURNAL, June 7, 1924, p. 1868).

Community Hospital at Boulder.—The University of Colorado, having moved the medical school to Denver, has planned to convert the old hospital building at Boulder to other uses. The chamber of commerce therefore undertook to raise funds to construct a new hospital by popular subscription, and ground was broken in June. The present Boulder Hospital will be remodeled, and there will be a new four story unit with thirty-seven additional beds and an operating department. The hospital will then have a total capacity of fifty-two patients. The new section will cost about $60,000.

FLORIDA

Health Officer Resigns.—Dr. Alva C. Hamblin tendered his resignation as city health officer of Tampa, effective August 1.

New State Health Officer.—Dr. Burdett L. Arms, Jacksonville, has been designated acting state health officer of Florida to serve until the successor of Dr. Raymond C. Turck, who retired August 1, is appointed.

New President of State Board.—At the first meeting of the new state board of health in the governor's office, Tallahassee, July 18, Charles H. Mann, Jacksonville, was elected president of the board, it is reported, the other members of which are Dr. Henry Mason Smith, Tampa, and Dr. William D. Nobles, Pensacola.

ILLINOIS

Physician Under Bond.—Dr. Louis H. Hayes, Alton, has been held under a bond of $5,000 to the federal court at Springfield, on a general charge of violating the national prohibition law, it is reported.

Society News.—The Lee and Ogle counties medical societies held a joint meeting and picnic at Lowell Park, Dixon, July 22, at which Dr. Dean Lewis, Chicago, gave an address on "Infections and Their Treatment," and Dr. George F. Dick, Chicago, on "Scarlet Fever Antitoxin."

Chicago

Faculty Appointments.—Among the appointments announced by the University of Chicago are those of Drs. George M. Curtis and Lester R. Dragstedt to be associate professors of surgery, Lieut. Col. Junius C. Gregory, U. S. Army, retired, to be assistant clinical professor (military medicine) in Rush Medical College, Dr. Charles Philip Miller, Jr., of the Rockefeller Institute for Medical Research, New York, assistant professor of medicine, and Dr. Chester M. Van Allen, assistant professor of surgery.

Medical Schemes.—The Chicago Medical Society *Bulletin* says that a so-called medical association is trying to sell stock to physicians with the idea that they will be employed to care for patients which the association may contract to attend. This organization claims, it is said, to be able to get in touch with large organizations and to contract to care for large numbers of people at so much monthly per member or family. There is another scheme doing about the same thing for 75 cents monthly for the whole family. This organization is appointing physicians in various districts to take care of its members on a schedule basis. The *Bulletin* cautions physicians to look into these organizations before making any alliance. Physicians who call in person at the offices of the Chicago Medical Society will be given information confidentially regarding these "new organizations."

Personal.—Dr. Arthur J. Cramp, head of the Bureau of Investigation, American Medical Association, Chicago, addressed the summer session students, department of hygiene and public health, University of Michigan, Ann Arbor, July 30, on "The Nostrum and the Public Health."——Dr. Truman W. Brophy, Chicago, was awarded the Miller prize for dental research at the International Dental Federation, Geneva, Switzerland, August 3, and was also made an honorary member of the Swiss Odontological Society.——Dr. Allen K. Krause, associate professor of medicine, Johns Hopkins University Medical Department, Baltimore, will give a series of lectures in Chicago, October 1, under the auspices of the Chicago Tuberculosis Institute, one to medical students, another to nurses and social workers, and another to physicians.

INDIANA

Physician Sentenced.—Dr. Charles E. Burris, a colored physician, 527 Agnes Street, Indianapolis, was sentenced June 23, to three years at Leavenworth prison and fined $500, after having been found guilty of violation of the Harrison Narcotic Law, it is reported.

Hospital News.—At a meeting of the staff of St. Francis Hospital, Beech Grove, recently, Dr. Vincent A. LaPenta was elected president; Dr. Raymond A. Butler, secretary, and Dr. Lindley H. Stafford, treasurer.——W. D. Williams, Richmond, has made a gift of $25,000 for the Rotary Convalescent Ward of the Riley Memorial Hospital, Indianapolis.

Fund for Research.—Eli Lilly & Company, manufacturers of pharmaceutical preparations, has arranged with Indiana University to donate $1,200 a year for five years to be used in research work. The fund will go to the department of surgery the first year, and Dr. Willis D. Gatch will have charge of the work. The trustees will decide later which other departments will receive funds.

IOWA

Hospital News.—Work has been resumed on the construction of the Iowa Lutheran Hospital, Mason City. The hospital is expected to be in operation this fall.

Report of Medicolegal Committee.—At the last meeting of the Iowa State Medical Society, the medicolegal committee reported, among other things, that from April 1, 1924, to April 1, 1925, twenty new cases came before the committee, in which the total amount of damages asked was more than $350,000. During this period eighteen cases were disposed of and seven cases settled at a cost of $7,600, and one judgment was obtained against a physician for $200. The committee dealt with a total of twenty-nine cases, four of which were dismissed at the plaintiff's cost. The attorneys' fees during this period amounted to more than $5,900.

First Meeting of New State Board.—The first formal meeting of the new state board of health was held, July 14-15, at which Dr. Harley L. Sayler was elected president of the board for the ensuing year, and Dr. Don M. Griswold, state commissioner of health, was elected secretary. The board considered, among other things, regulations for the control of communicable disease and will shortly publish new rules incorporating changes made. The plan of the state department of health for a survey of stream pollution was authorized, and three sanitary engineers added to the staff to handle this work and the sanitation of bathing beaches.

KANSAS

New University Proposed in Kansas City.—Reports state that plans are being made by the Methodist Episcopal Church to establish a new university in Kansas City. According to the Kansas *Citian*, a campaign to raise $5,000,000 for the enterprise will be made sometime between January and June, 1926.

KENTUCKY

Hospital News.—Somerset General Hospital, Somerset, it is reported, will be incorporated and owned by fifteen physicians. Dr. Achilles W. Cain is now in charge.——The Pulaski County Hospital, Somerset, was recently opened.

Personal.—Dr. Jethra Hancock has been promoted to the rank of lieutenant colonel in the Medical Officers Reserve Corps of the U. S. Army.——Dr. Finis M. Travis, Benton, has been appointed medical director of the state reformatory at Frankfort.

LOUISIANA

Personal.—Dr. Samuel F. Elder has been appointed senior house surgeon and Dr. Richard O. Russell, senior medical officer at the Charity Hospital, New Orleans.

Mosquito Control.—Acting Surg. Gen. Mark J. White, U. S. Public Health Service, has transmitted to Dr. Oscar Dowling, president, Louisiana State Board of Health, the recommendations of Mr. J. E. LePrince, senior sanitary engineer, for eliminating the mosquito from the coast of Mississippi and Louisiana. Three years of intensive work will be needed for this project.

Hospital News.—The Louisiana Tuberculosis Commission has adopted plans for the hospital at Greenwell Springs, East Baton Rouge Parish, the estimated cost of the first unit being $50,000. The commission has about $27,000 with which to undertake the work.——Dr. William J. Devlin has been appointed roentgenologist at the Charity Hospital in New Orleans to succeed Dr. J. G. Donald, resigned. This hospital recently obtained a loan of $65,000 to help defray the expense involved in the erection of the new Dibert Memorial Hospital for tuberculosis patients.

MARYLAND

Building at Eudowood Opened.—Dr. William A. Bridges, superintendent of the Eudowood Sanatorium, Towson, has announced the opening of the new medical building which is equipped for the diagnosis and treatment of tuberculosis. This building adds ten rooms, each with bath and a private porch, to the accommodations of the institution.

Personal.—Dr. Hugh H. Young, clinical professor of urology, Johns Hopkins Medical School, Baltimore, has accepted the chairmanship of the executive committee of the Chesa-

peake American Red Cross Life-Saving Corps. The aim of the organization is to establish life-saving stations in about 500 communities along Maryland's water-front region.

Death from Typhus Fever.—The death of a resident of Maryland from typhus fever has been reported to the state department of health. Dr. Robert H. Riley, chief of the Bureau of Communicable Diseases, stated that the patient was a woman who lived near St. Michaels who had just returned from Atlantic City when stricken. This is the first case of typhus fever in the counties this year.

Applicants for Treatment for Rabies.—The desire for precaution in cases of dog bites and an awakened public interest are the reasons assigned for the number of Pasteur treatments given in July by the state department of health. At least seventy-three persons applied for treatment, the largest number in any one month in the history of the Pasteur Division, which was established in 1915. The bureau has had a monthly average of twenty cases for treatment for rabies, and in June more than fifty persons applied. Dr. Caleb W. G. Rohrer, chief of the Pasteur Division, advised that dogs should be vaccinated against rabies to protect the public as well as the dogs.

Society News.—Dr. J. M. H. Rowland, dean, professor of obstetrics, University of Maryland School of Medicine, has accepted an invitation of the Medical Association of Wicomico County to give a series of lectures at Salisbury before members of that association and physicians of adjoining counties. Dr. Rowland gave the first lecture, July 28, assisted by members of the staff of the Bureau of Child Hygiene of the state health department. It is planned to repeat these lectures in other parts of the state, if county medical societies are interested.——Dr. Waitman F. Zinn, Baltimore, addressed the Allegheny County Medical Society, July 24, on "Bronchoscopy and Esophagoscopy" in Cumberland. The lecture was illustrated by lantern slides showing stricture and also foreign bodies removed from the esophagus.

Appointments at Wilmer Institute.—Dr. Cecil H. Bagley, instructor in surgery and assistant resident physician, Johns Hopkins Hospital, Baltimore, has been chosen first resident for the Wilmer Institute, which will open in the fall. Dr. Bagley has lately been at Manhattan Eye Hospital, New York, and at other centers observing surgical methods. He is a graduate of Johns Hopkins University and Medical School and was appointed to the surgical staff in 1922. He will be first assistant to Dr. Wilmer. Dr. Jonas Stein Friedenwald, instructor in pathology, Johns Hopkins Medical School, is to be added to Dr. Wilmer's staff to conduct research work in eye diseases. Dr. Friedenwald is a graduate of Johns Hopkins University and Medical School, class of 1920, and was appointed to the faculty in 1923. An announcement of the complete staff of Wilmer Institute will be made on Dr. Wilmer's return from Europe, this month.

MASSACHUSETTS

Memorial to Dr. Buck.—Physicians and friends of the late Dr. Augustus W. Buck have presented to the Union Hospital in Fall River a new ambulance as a memorial to Dr. Buck. The body is of special design furnishing accommodation for five patients.

Shellfish Area Condemned.—The Shellfish-bearing flats of Newburyport Harbor, together with the Merrimack River and adjacent and tributary waters, have been decreed contaminated by the Massachusetts Department of Public Health, which will therefore not permit taking shellfish from these areas.

MICHIGAN

Personal.—Dr. James J. Woods has taken up the duties as city health officer of Ypsilanti.——Dr. Rayburn B. Smith has been elected president of the school board of Alma.

Chlorin Tanks for Bathing Beach.—The commissioner of health of Detroit announced, July 20, that three chlorin gas tanks, each of 100 pounds capacity, would be installed at the Belle Isle bathing beach in an effort to prevent the pollution of the water.

Dr. Pickett Appointed Health Officer.—Mayor Tausend of Saginaw announced, July 21, that Dr. William H. Pickett, health commissioner of Great Falls, Mont., has been appointed city health officer. Dr. Pickett was formerly deputy state health commissioner for Missouri; he served in the army during the World War.

Hospital News.—At the annual meeting of the Sanatorium and Benevolent Association at Battle Creek, July 15, among others, Dr. John Harvey Kellogg, Dr. Walter F. Martin, Dr. Alfred B. Olsen and Dr. Charles E. Stewart were elected members of the board of trustees. Dr. Olsen succeeds George H. Murphy, who has been a member of the board for forty-five years.

Home-Coming Celebration.—The Alpena County Medical Society cooperated with the Alpena Home-Coming Committee, July 8, in a home-coming for physicians who formerly practiced in Alpena or received their high school education there, and thirty physicians returned for the celebration. According to the *Journal of the Michigan State Medical Society*, more than 1,000 persons whose birth Dr. Duncan A. Cameron attended took part in a procession in his honor. Dr. Johnston B. Kennedy was the principal speaker; a reception and dance completed the Cameron Day program, which was arranged by laymen with the exception of the ball game and dinner arranged by the medical society.

MISSOURI

Establishing County Health Departments.—Surg. Thomas Parran, Jr., U. S. Public Health Service, has been directed to proceed to Jefferson City, Mo., and such other points in Missouri and Kansas as may be necessary in the next three months and return, to confer with public health officers and local authorities relative to the development and formulation of programs for the conduct of full-time rural health service in those states.

Personal.—Acting Surgeon Paul K. Jenkins, St. Louis, has been directed to proceed to Ellis Island, New York, for assignment to duty with the U. S. Public Health Service.——Dr. William J. Bryan, who was formerly connected with the Fulton State Hospital, has been appointed superintendent of the State Tuberculosis Sanatorium at Mount Vernon.——Dr. W. W. Johnston, formerly of Carlsbad, N. M., has been appointed deputy state commissioner of health and field agent, U. S. Public Health Service, with headquarters at Flat River.

Dr. Graves Will Lecture in Scotland.—Dr. William W. Graves, professor and director of the department of mental and nervous diseases, St. Louis University School of Medicine, St. Louis, has been invited to deliver a lecture under the auspices of the William Ramsay Henderson Trust in the University of Edinburgh, October 16. The subject will be "The Relations of Shoulder Blade Types to Problems of Mental and Physical Adaptability." Prof. Arthur Robinson, director of the department of anatomy, University of Edinburgh, or the Rt. Hon. Lord Salvesen, P.C., K.C., a trustee of the Henderson Fund, will preside at the meeting.

Governor Opens Health Education Campaign.—Governor Baker was the principal speaker at the first meeting of the campaign for public health education at Rolla, July 24. The governor reviewed the history of the medical profession and contrasted the ethical physician with the charlatan and quack. The meeting was attended by more than 400 people. The state board of health is cooperating in the campaign, and the president, Dr. Emmett P. North, and the secretary, Dr. James Stewart, as well as the assistant attorney general, J. Henry Caruthers, gave addresses. Dr. North reminded the audience that the laws of the state concerning the practice of medicine are defective and that this was responsible for so many untrained and uneducated practitioners in Missouri. He stated that the state medical association had attempted to correct this condition at the last legislative session and that the bill failed because many legislators are not informed about the seriousness of untrained persons practicing medicine. It became necessary, therefore, to educate the people in matters of hygiene and sanitation, that they may instruct the legislators to make laws which will prevent incompetent practitioners treating the sick.

NEBRASKA

Society News.—At the recent meeting of the Republican Valley Medical Association at Franklin, Dr. William F. Dugan, Campbell, spoke on "The Expert Medical Witness"; Dr. Peter A. Sundbury, Holdrege, on "Diabetes Mellitus"; Dr. Joseph N. Campbell, Stamford, on "The Kidney of Pregnancy"; Dr. Clay E. Mollinaux, on "Congenital Kidney," and Dr. Luther F. Egen, Hastings, on "Jaundice."——The Cedar, Dakota, Dixon, Thurston and Wayne Counties Medical Society cooperated in a heart clinic, which was held at Laurel, June 17, and conducted by Dr. William N. Anderson, Omaha, and Dr. William D. Runyon, Sioux City.

NEW YORK

Hospital News.—Dr. Sigismund S. Goldwater, New York, has been engaged as consultant in the construction of the Syracuse Memorial Hospital, which will be erected near Syracuse University.——A new measles pavilion has been provided for the contagious disease hospitals in the city to take the place of the one closed in 1924 by the health commissioner; other improvements at these hospitals include roentgen-ray outfits at the Willard Parker and the Kingston Avenue hospitals, and pathologic laboratories at the Willard Parker and the Riverside hospitals. A sixty room isolation hospital will be provided at the former institution at a cost of $240,000.

Midwives in New York.—There are now 409 midwives licensed to practice in the state, exclusive of the cities of New York and Rochester. They are distributed in 133 localities, in only sixty-seven of which they are under the supervision of local public health nurses who report quarterly to the state department of health. The latest available figures of the department show that 9.3 per cent. of the total births registered upstate in 1923 were reported by midwives. Since January 1, this year, licenses have been issued to fifteen midwives, five of whom had diplomas from schools recognized by the department of health; the other ten presented qualifications showing "superior training and experience."

Jamestown Eye Survey Completed.—A city-wide survey with special reference to eyesight of school children was recently completed in Jamestown. Through the cooperation of the New York State Board of Education, the Jamestown public schools, the New York State Commission for the Blind, and the New York State Committee for the Prevention of Blindness, which is a standing committee of the National Committee for the Prevention of Blindness, approximately 8,000 school children were examined. The study, while primarily an eye survey, also included the examination of the ears, noses and throats. A complete report of the study will be made available within a short time, which will show the amount of defective vision existing in a school population of 8,000 children; what percentage of this can be corrected; what percentage of children should be given specialized education, and who shall make the yearly examination of the eyes of school children.

New York City

Ban on Celery.—The New York City Board of Health ordered three large celery growers in Bergen County, New Jersey, to discontinue delivering their products in New York City. It was found, it is reported, that the county tuberculosis and isolation hospitals in Paramus Borough adjoined the celery farms and that there was a leakage of sewage from the hospital tanks.

Portraits of Physicians.—The collection of portraits of physicians presented to the Academy of Medicine by Dr. Charles L. Dana has been recently augmented by the following portraits:

Govard Bidloo	Ernst Platner
Joseph Black	François Rabelais
Hermann Boerhaave	Erasmus Darwin
Ephraim Bonus	George Fordyce
William Cowper	Theophile de Garencières
Thomas Browne	Samuel Garth
J. F. Blumenbach	Johann Georg Gmelin
Robert Glynn	Claudius Galen
Johannes Heins	Johann Albert Heinrich Reimarus
Nathaniel Highmore	Moritz H. Romberg
Edward Jenner	Antonio Scarpa
Nicholas Abraham de la Framboisière	Nicholas Tulp
Richard Mead	Bernhardus Verzascha
Henry Moyes	Rudolph Virchow
Ph. Th. A. Paracelsus	John Wasdale
Ambroise Paré	Sir Thomas Watson
John Patch	James R. Wood

NORTH CAROLINA

Hospital Endowed.—Mr. E. D. Latta, Asheville, recently died leaving a will creating a charitable endowment of about two million dollars. One half of the income is to inure permanently to the benefit of the Asheville Mission Hospital, providing especially for the immediate construction of a nurses' home and a free maternity ward.

Commission on State Institutions.—Dr. Watson S. Rankin, medical member of the Duke Foundation, and Dr. Thurman D. Kitchin, dean and professor of physiology and pharmacology in the Wake Forest College Medical Department, Wake Forest, have been appointed members of a commission to report to the governor on the condition of the state institutions. Three well known business men are also members of the commission.

New Commanding Officer at Oteen.—Dr. Herbert E. Whitledge, medical officer in charge, U. S. Veterans' Bureau Hospital, Oteen, N. C., has been relieved by Dr. Edward P. Odend'hal, Washington, D. C. Dr. Whitledge has been in active service continuously for a long period and will have an indefinite leave. Dr. Odend'hal was executive officer at Oteen in 1920, later commanding officer at Hospitals No. 84, New Orleans, and No. 41, New Haven, Conn., and more recently at the new 500 bed hospital (No. 96) in the Adirondacks, from which he went to Washington as chief of tuberculosis hospitals for the Veterans' Bureau.

Licenses Revoked.—The North Carolina State Board of Medical Examiners, after due notice, at a called meeting of the board, recently revoked the license to practice medicine in North Carolina of Drs. Edwin H. Bowling, Durham, N. C.; Thomas A. Smith, Charlotte, N. C., and Harvey Robinson, Reidsville, N. C., following convictions in the federal courts of violations of the Harrison Narcotic Law. The North Carolina laws do not permit the revocation of licenses by the board of examiners without the accused having been served with formal notice and having an opportunity to be heard, for which reason the board has not acted on the cases of Drs. Memory F. Boyles, Gastonia, and Frank V. Taylor, Dallas, both of whom are now serving sentences in the federal penitentiary, Atlanta, Ga., for similar convictions. The board has issued formal summons to the sheriffs of Durham and Buncombe counties for service on Drs. James F. Brewer, Ptolmey P. Chambers, Garret D. Gardner, George W. Purefoy, and Thomas W. Sumner of Buncombe County, and Needham P. Boddie, Ira J. Stoner and William A. Strowd of Durham County, all of whom have recently been convicted of violating the Harrison Narcotic Law. These cases will be heard by the board at a special hearing in Greensboro, September 15. Indications point to a session of the board extending over a few days possibly, as the convicted physicians have employed legal talent to resist the action of the board. The leading members of the profession, and many laymen are congratulating the board on its manifested disposition to comply with the North Carolina statutes.

NORTH DAKOTA

Six Deaths from Infantile Paralysis.—Following an inspection by the state health officer, it was reported, July 21, that six deaths had occurred in Nelson, Ramsay and Walsh counties from infantile paralysis. There had then been a total of thirteen cases in these counties. Public gatherings have been prohibited in an area about 50 miles square north of Lakota.

OHIO

Hospital News.—The Community Hospital, which is conducted by six villages, has been opened at Berea. The building cost $125,000.——The Deaconess Hospital, Cincinnati, has announced plans for an eighty-bed addition, and has planned a campaign for funds.——Bids are being taken at the Mount Sinai Hospital, Cleveland, for buildings that will cost $1,350,000.

Personal.—Dr. Harry E. Kleinschmidt has resigned as executive secretary of the Toledo Public Health Association, effective August 1, in order to accept a position as head of one of the divisions of the state department of health.——Dr. Arlington Ailes resigned, July 24, as health commissioner of Sidney to become director of hygiene of the LaSalle Institute, LaSalle, Ill.

Society News.—Dr. Frank Warner, Columbus, addressed the Hardin County Medical Society, Kenton, recently, on differential diagnosis of acute intra-abdominal diseases.——Dr. J. R. Heath, Grover Hill, was elected president of the Tri-County Medical Society, at the annual meeting, Van Wert; Dr. John T. Gibbons, Celina, vice president, and Dr. Hubert Ray Chester, Van Wert, secretary.

Injunction Against Chiropractors' Proposal.—Judge Scarlett, Columbus, granted a temporary injunction, July 24, restraining the secretary of state from proceeding to submit to popular vote in November the proposal for a separate board of chiropractic examiners in Ohio. The court held that the supplemental petitions necessary had not been filed within ninety days after the bill to create a special board of examiners had been lost in the legislature. More recently the Ohio State Medical Association reports that the court

of appeals has affirmed the foregoing decision of Judge Scarlett in the common pleas court, thereby sustaining the "permanent injunction . . . as prayed for."

OKLAHOMA

Society News.—Dr. Victor C. Tisdal, Elk City, has been reelected president of the Beckham County Medical Society, and Dr. William D. Oliver, Erick, reelected secretary.——The Ottawa County Medical Society has purchased a camp on the Elk River, where it plans to hold meetings as well as use the place for outings.

Personal.—Dr. Ernest W. Reynolds was recently elected city physician of Bristow, succeeding Dr. Oscar S. Coppedge.——Dr. H. Clay Manning, Cushing, has leased the Cushing Municipal Hospital for another year.——Dr. Charles N. Caton, Ravia, has been appointed county health officer.——Dr. James W. Craig, Vinta, has been reappointed for the sixth time state medical director for the Modern Woodmen of America.

Hospital News.—According to *Hospital Management*, construction will begin on a thirty-bed hospital at Depew, to be erected by Dr. Oscar S. Coppedge.——The Oklahoma Hospital, Tulsa, has been sold to the Delaware Baptist Association, an organization of churches at Tulsa, Creek, Osage, Nowata, Washington and Rogers counties. The hospital for ten years has been under the direction of Dr. Fred S. Clinton, Tulsa, who under the new arrangement will be a member of the board controlling the property. The hospital will be owned and controlled by the Baptists, but will be conducted on a nonsectarian basis, and various denominations will be represented in its management. The present employees will remain.

OREGON

Hospital News.—The construction of a new wing, costing about $225,000, at the Eastern Oregon State Hospital, Pendleton, is expected to start in July.

University of Oregon Medical School.—Word has been received that the U. S. government has decided to accept the offer of a tract of land which constitutes part of Sam Jackson Park, Portland, as a site for a hospital for disabled veterans, which will cost about $1,300,000. An outstanding gift to the medical school in the last year was 88 acres of land on Marquam Hill, adjoining the present campus, by Philip L. and Dorothy S. Jackson, and named in honor of their father, Sam Jackson Park. The Portland Rotary Club recently gave $25,000 to the medical school for additional equipment in the Doernbecher Memorial Hospital for Children, which is being erected on the campus, and for the maintenance of which during part of 1926 the Oregon Chapter of the American Legion is raising $60,000, and for which the Oregon State Federation of Women's Clubs is raising $20,000 for equipment. The Portland Junior League has given $5,000 to equip the orthopedic clinic, and Dr. Noble Wiley Jones has given the school $5,000 to establish a fellowship in pathology.

PENNSYLVANIA

Personal.—Dr. Robert D. Spencer, for several years pathologist at the State Hospital, Ashland, tendered his resignation, July 14, effective October 1.——Dr. Charles E. Bredt has been appointed a member of the board of health of Mahanoy.

Charity Meeting.—George R. Bedinger, executive director of the Public Charities Association of Pennsylvania, announces that the fall meeting of directors will be held in Bethlehem, October 23. Dr. Charles H. Frazier, Philadelphia, will be toastmaster, and Dr. W. L. Estes, Bethlehem, will preside.

Report of State Department of Health.—The biennial report of the state department of health for the period ended May 31, 1924, which has just been received, states that the health problem in Pennsylvania involves 284,000 farmers, 225,000 coal miners, 1,426,000 factory workers and their families, thirty-nine cities, 933 incorporated boroughs and 1,567 townships. The cities, boroughs and first-class townships have local boards of health, but the state department is responsible for the health of the people in second-class townships. Since the creation of the department of health in 1906, the death rate from all causes in Pennsylvania has fallen 23 per cent., the death rate from typhoid fever 92 per cent., and that from tuberculosis, 40 per cent. The state department of health has carried on a campaign against tuberculosis through its 100 clinics and three sanatoriums. A campaign for better milk has resulted in fifty-four municipalities passing ordinances recommended by the department. The Sanitary Water Board is charged with the administration of anti-stream-pollution laws, and it has taken action to keep clean nearly 3,500 miles of streams which are now clean, and make sanitary surveys of many more.

Philadelphia

Bids for General Hospital.—At the second attempt to obtain bids for construction of the Philadelphia General Hospital, within the $4,000,000 appropriation, bids for the work, aggregating $3,589,900, were opened, July 31, by the director of the department of public health. The bids for construction received a week ago were more than $500,000 in excess of the $4,000,000 available, this necessitating the elimination of certain features from the plans and a readvertising of the project.

Bulletin on Smallpox.—The June-July bulletin of the Department of Public Health of Philadelphia is devoted entirely to smallpox. There are reproductions of a typical vaccination beside an immune reaction of the lesions in various stages of smallpox, and one colored plate of a severe case in the pustular stage. The last great epidemic of smallpox in Philadelphia was from 1901 to 1904, and there were 5,025 cases with 894 deaths. In the following twenty years there were 270 cases reported in the city, with seven deaths; in 1923, there were sixty cases and in 1924 thirty-three, with no deaths in either year. There was a death from smallpox, however, early in 1925, which the health department regarded as warning to prepare for a severe outbreak. A special appropriation was requested from the city council to enable the department to employ twenty additional physicians as medical inspectors. This was promptly granted, and a determined effort is being made to prevent the spread of smallpox. There had been up to June 19, this year, twenty-three deaths among 183 cases of smallpox reported. What the ultimate result of the present struggle will be, it is too early to say; but at this time the department considers the prospects hopeful.

TENNESSEE

University of Tennessee College of Medicine.—The state legislature this year appropriated $315,000 to purchase additional lots adjoining the present holdings of the university in Memphis, also $250,000 to assist in the construction of the first unit of the proposed building program; $100,000 has been donated by the citizens of Memphis also for this purpose. The first unit will be five stories high and accommodate the departments of anatomy, physiology and chemistry, and construction work will start this summer.

TEXAS

Hospital News.—The $1,000,000 Methodist Hospital, at Fort Worth, to which the citizens of that city contributed $500,000 for its erection, was formally dedicated, July 1. The hospital is nine stories high. An unusual feature will be the installation in each room of a radio for the entertainment of patients.

Society News.—Capt. William D. Gill, U. S. Army, addressed the Dallas County Medical Society, Dallas, recently on "Fractures About the Orbit" (illustrated with lantern slides).——Dr. Otto J. Potthast addressed the Bexar County Medical Society recently on "The Coffey Quarantine Pack Method of Abdominal Drainage: Its Description and Remarks on the Principles on Which It Is Based and Its Application."——Dr. John W. Tappan, surgeon, U. S. Public Health Service, addressed the El Paso County Medical Society, El Paso, recently on "Public Health Problems Along the Texas Mexican Border."

State Board Calls for Help.—Having no funds except the application fees, the state board of medical examiners is unable, according to the *Texas State Journal of Medicine*, to enforce the medical practice act. The board has appealed for help, therefore, to enforce the medical practice act, to the president of the state medical association, Dr. Charles M. Rosser. After a conference with the executive council, Dr. Rosser said in part that whatever can be done, within the bounds of the proprieties, will be done to help. He also informed the public that the enforcement of the medical practice act is the prime responsibility of the law enforcement officials of the state and only secondarily the responsibility of the medical profession as such. In conclusion, he said, "We are perhaps promising to exercise leadership in some particulars . . . but we will be acting in coop-

eration with the courts and the officers of the law in the enforcement of the act."

Policies of the State Society.—The newly created executive council of the Texas State Medical Society, in conference with the president, has determined on the following policies for the present administration of the society:

1. Encourage individual observation of proper ethical relations between members of the medical profession and between the medical profession and the people it serves.
2. Admonish prompt compliance with state laws relating to vital statistics.
3. Appeal to our members, individually and collectively, through the medium of moral suasion, to keep faith with the federal and state governments in the matter of prescribing narcotics and alcoholic liquors.
4. Reclaim to the association respectable physicians who have for surmountable causes allowed their membership to lapse.
5. Bring into membership all educated, honorable and legally qualified practitioners of medicine who have heretofore neglected to join their respective county societies.
6. Commend to component county societies the advisability of giving periodic publicity through the lay press to their membership roster, as an aid to the public in determining who are legally qualified to practice medicine and who may be considered ethical in their practice.
7. Give active support to the law enforcement officers and the courts, in the detection and prosecution of physicians guilty of immoral or criminal practices of any character.
8. Cooperate with the state board of medical examiners and the law enforcement officers of the state, as fully and aggressively as may be required, in prosecuting alleged violators of the medical practice act.

WEST VIRGINIA

Society News.—The new officers of the Ohio County Medical Society, Wheeling, are Dr. John E. Marschner, president; Dr. Charles H. Clovis, vice president; Dr. John G. Thoner, secretary, and Dr. Arthur L. Jones, treasurer.

Seventy-Five Chiropractors Exempted.—The new state board of chiropractic examiners granted licenses to seventy-five chiropractors, July 23, by reason of their having practiced in the state a certain time. About forty-five chiropractors who were not exempt took the examination.

WISCONSIN

Complete Medical Course at State University.—A four year medical course leading to the degree of M.D. has been established at the University of Wisconsin, Madison, the third year starting this fall and the fourth year starting the fall of 1926. Heretofore the university has offered a two year course. The completion of the new Wisconsin State Hospital, Madison, has furnished clinical facilities which made possible the new arrangement.

Infantile Paralysis Epidemic.—Regulations were issued by the state health officer of Wisconsin, July 20, forbidding residents of districts in which infantile paralysis prevails from visiting Camp Douglas, where the Wisconsin National Guard is encamped. Winona and Galesville are centers of heavily infected districts. Dr. Edward C. Rosenow of the Mayo Clinic visited the Wisconsin area, July 20. Isolation orders have been issued in Wisconsin by various health officers which, among other things, forbid children under 16 years of age from congregating in public places from July 19 to August 8.

PHILIPPINE ISLANDS

Local Antileprosy Campaign Fails.—The campaign by the Philippine Antileprosy Society to raise $50,000 for Culion Leper Colony in connection with the $1,000,000 campaign in America has failed, it is reported, and the local antileprosy society dissolved. The lack of response is said to have been due to opposition of the Spanish language papers to the leaders of the antileprosy society.

GENERAL

Increase in Typhoid Fever.—Thirty-three states reported to the U. S. Public Health Service a total of 854 cases of typhoid fever for the week ended July 11, 1925, and for the corresponding week of last year, 579 cases; 103 cities reported 102 cases of typhoid fever, and for the corresponding week last year, 142. The estimated expectancy for these cities was 134 cases.

Increase in Poliomyelitis.—Preliminary telegraphic reports to the U. S. Public Health Service indicate an increase in the number of cases of infantile paralysis this year. For the seven weeks ending July 18, thirty-two states reported 462 cases of this disease, while from June 1 to July 19, 1924, the same states reported 121 cases. California reported 154 cases in this period, this year, New York 66, Minnesota 46, New Jersey 35 and Illinois 20. An outbreak occurred in South Carolina in April, 1925, and up to July 16 there had been 102 cases reported.

Intensive Training in Chemical Engineering.—At the Tenth Exposition of Chemical Industries, Grand Central Palace, New York, September 28-October 3, there will be a one week's course of intensive training in practical technic of chemical engineering, and about twenty American colleges and universities have filed applications for their students of chemistry to take the course. More than 300 students are expected to enroll. Leading authorities on chemical engineering will be among the lecturers, and tours among the exhibits for practical demonstrations will be conducted. There will be an examination at the close of the course, some colleges having designated their intention to give credit for this work. Prof. W. T. Read of Yale University, New Haven, Conn., will be in charge of the course.

Automobile Fatalities.—The Department of Commerce announces that in thirty-six of seventy-seven cities of 100,000 population or more, there was an increase in the automobile fatalities in the four week period ending July 18 over that of the previous four week period. The following cities had no fatalities for the last four weeks: Spokane and Tacoma, Wash.; Norfolk, Va.; Oakland, Calif.; Bridgeport, Conn.; Oklahoma City and Springfield, Mass. New Bedford, Mass., still holds the record for 1925, with two deaths. Up to July 18, New York City had reported 501 automobile fatalities; Chicago, 299; Philadelphia, 149; Detroit, 127, and Los Angeles, 122. For fifty-seven cities with a total population of 27,000,000 there had been 2,511 automobile fatalities up to July 18, this year, as compared with 2,438 up to July 31, 1923.

Colored Physicians' Annual Meeting.—The National Medical Association, under the presidency of Dr. Michael O. Dumas, Washington, D. C., is making preparations for its thirteenth annual session, to be held in Chicago, August 25-29. Dr. Dumas will deliver the president's address at the opening of the session. Affiliated with the National Medical Association and in session at the same time will be the National Hospital Association and the National Association of Life Insurance Medical Examiners. Scientific sessions will be held at the Wendell Phillips High School, and medical, surgical and dental clinics at the Providence and Wilson hospitals. Public health meetings are planned under the auspices of the General Health Committee of the association, the department of public health in the state of Illinois and the U. S. Public Health Service.

Blindness Due to Industries.—In a study of eye hazards in industrial occupations, the National Committee for the Prevention of Blindness recently concluded that, of the 100,000 blind persons in the United States, about 15,000 have lost their sight in the pursuit of industrial occupations, and there is, in addition, a much larger number of persons whose vision has been so impaired in the industries that they will be handicapped through life. The metal manufacturing industries are the source of the greatest number of serious eye injuries. In Pennsylvania, the coal mining industry ranks first as a cause of industrial blindness; in Wisconsin, "hand tools" is the greatest single cause, and in a large ship building company 38 per cent. of all cases treated in its dispensary were eye injuries. The full report of this committee is a volume of 250 pages and may be secured from the Committee for the Prevention of Blindness, 130 East Twenty-Second Street, New York.

Pan-Pacific Science Congress.—The National Research Council of Japan has announced plans for the Third Pan-Pacific Science Congress, to be held in Tokyo, Oct. 25-Nov. 18, 1926. The announcement states that the main objects of the congress are (1) to promote cooperation in the study of scientific problems relating to the Pacific region, especially those affecting the prosperity and well being of the Pacific peoples, and (2) to strengthen the bonds of peace among Pacific peoples by promoting a feeling of brotherhood among scientists and through them among citizens in general. Three symposiums have been selected for discussion at the general sessions and sixteen symposiums for the divisional meetings. The First Pan-Pacific Science Congress was held in Honolulu in 1920, under the auspices of the Pan-Pacific Union; the second congress was in Sydney and Melbourne, Australia, in 1923, under the auspices of the National Research Council of Australia. Wayland Vaughan, Ph.D., director of the Scripps Institution for Biological Research and vice chair-

man of the committee on Pacific investigations of the National Research Council, has been appointed the representative from the United States on a committee to effect a permanent organization of scientific institutions of the various countries of the Pacific region, and Herbert E. Gregory, Ph.D., director of the Bernice Pauahi Bishop Museum of Honolulu, will represent Hawaii.

FOREIGN

Typhoid in Tokyo.—The health authorities of Tokyo have started an antityphoid campaign in which they plan to have made more than 1,000,000 antityphoid vaccinations. Typhoid has increased in Tokyo from 3,378 cases in 1922 with 794 deaths, to 4,448 cases in 1923 with 813 deaths and 5,459 cases in 1924 with 812 deaths.

Society News.—At the annual general meeting of the Royal Society of Medicine, London, in July, Sir St. Clair Thomson was elected president for the ensuing year; Sir William Hale White, past president; Drs. Charles H. Fagge and Edward Farquhar Buzzard, treasurers, and Drs. William Girling Ball and Henry Letheby Tidy, secretaries.

Institute for Food Research.—Construction work will begin shortly on a well equipped institute for food research at the Keio University Hospital, Tokyo, which will have a special laboratory connected for physiology, pathology and bacteriology. The institute will be a two story reinforced concrete structure costing about 200,000 yen, and Dr. K. Oahmori, professor of internal medicine at the university, will be in charge.

Fifty Thousand Dollars to Medical Research Council.—The trustees of the late Sir William Dunn estate set aside, July 20, $10,000 a year for five years for the Medical Research Council, London, for research work in medicine. In accepting the fund, the council announced that it would be applied chiefly to furthering its current organized studies and first of all to the study of filtrable viruses, particularly those concerned in the recent cancer researches of Barnard and Gye.

Hospitals for Persons of Moderate Means.—At the recent conference of the British Hospitals Association it was pointed out that an increasingly large number of persons of moderate means are finding it more difficult to secure the advantages of recent advances in medicine on account of the expense, and that large numbers of the middle classes are forced to seek treatment in voluntary hospitals, with the result that waiting lists obtain inordinate dimensions. The *Lancet* points out that the hospitals in England are struggling against financial difficulties and their future is problematic unless they can be established on some sounder basis than the present one, and among the schemes proposed is the extension of their wards to paying patients.

University of New Zealand Medical School.—The cornerstone of the new University of New Zealand Medical School, which is about half completed, was laid with appropriate ceremonies, by the minister of education, Sir James Parr, June 18. Sir Lindo Ferguson, dean of the medical faculty, said that eight years ago this great work was "but a dream" and that the minister has now given assurance that it must be finished, whatever the cost. The building, including the site, will represent an expenditure of about £100,000. The number of students at the medical school has increased from fifteen in 1885 to 265 in 1925. The difficulties incident to moving the school to the present site, near the hospital, have been surmounted largely through the efforts of the dean.

Cholera and Plague in India.—There were 36,045 deaths from plague reported to the Health Section of the League of Nations in the provinces of India between February 15 and April 18. The mortality during this period, the time of year at which plague is at its maximum in India, amounted to only 40 per cent. of the mortality for the corresponding period of the previous year. The improvement was mainly in the Punjab, where there were very severe epidemics in 1924. It is possible to determine now, the report says, that 1925 will be a year of low plague incidence in India. Cholera was much less prevalent in India in April than in April of the previous year, there being 7,189 deaths in the four weeks ending April 18 as against 27,501 during the corresponding period of 1924.

Deaths in Other Countries

Prof. **Adolph Lazarus,** collaborator with the late Professor Ehrlich, at Berlin, Germany, July 22, aged 58.

Government Services

U. S. Public Health Service

Surg. J. P. Leake has been directed to proceed from Washington, D. C., to Columbia, S. C., and to such other points as may be necessary to investigate an outbreak of poliomyelitis.——P. A. Surg. Claude W. Mitchell has been relieved from duty at Baltimore and assigned to duty at Washington, D. C., in connection with the investigation of public health hazards connected with the distribution and use of tetra-ethyl lead gasoline.——Associate Sanitary Engineer Leslie C. Frank has been directed to proceed from Montgomery, Ala., to Athens and such other points in Georgia as may be necessary, to make a study of the milk situation.——Surg. J. G. Wilson has been relieved from duty at Rosebank, N. Y., and assigned to duty at Los Angeles in connection with plague suppressive measures.——Surg. Francis A. Carmelia has been directed to assume charge of all quarantine and immigration activities at the port of Philadelphia.——P. A. Surg. R. D. Lillie has been assigned to duty at the Hygienic Laboratory, Washington, D. C.——Asst. Surg. J. J. Donovan has been directed to proceed from Danzig to Neustadt, Poland, when necessary during the fiscal year 1926 to see that the U. S. quarantine laws are enforced with regard to passengers coming to the United States.——Surg. T. J. Liddell has been relieved from duty at Port Arthur, Texas, and assigned to duty at Los Angeles in connection with plague eradication measures.——Surg. W. F. Tanner has been relieved from duty at the Hygienic Laboratory, Washington, D. C., and assigned to duty at Ellis Island, New York.——Associate Sanitary Engineer Leonard Greenburg will proceed from time to time during the fiscal year 1926, on receipt of instructions from the medical officer in charge of industrial hygiene, to Danbury, Conn., to assist and supervise in a study of mercurial poisoning among workers on felt hats at that place.

Army Personals

Lieut. Col. William A. Wickline has been directed to assume command of the St. Louis Medical Intermediate Depot after about five months' temporary duty in the office of the Surgeon General and a short period in the New York General Intermediate Depot.——Major James M. Troutt will sail from New York City, about December 4, for Hawaii.——Captains James R. Hudnall, West Point, Samuel L. Thorpe, Fort McPherson, Ga., and Harry E. Hearn, Fort Barrancas, Fla., will sail about November 24, for the Canal Zone for duty.——Dr. John P. Russell, Washington, D. C., has been appointed first lieutenant in the regular army medical corps, and will report to the Army Medical School, Washington, D. C., for duty for instruction.——Dr. Hubert M. Nicholson was promoted from lieutenant to captain in the regular army medical corps, July 11.

Examination for U. S. Public Health Service

There will be examinations of candidates for entrance in the regular corps of the U. S. Public Health Service, September 14, at Washington, D. C., Chicago, New Orleans and San Francisco. Candidates must be not less than 23 nor more than 32 years of age and must have graduated at some reputable medical college, had one year's hospital experience or two years' professional practice. Those who pass satisfactorily oral, written and clinical tests, as well as a physical examination, will be recommended for appointment by the President with the consent of the Senate. Requests for permission to take the examination may be obtained from the Surgeon General, U. S. Public Health Service, Washington, D. C.

Postgraduate Work in the Navy

About forty navy medical officers took special postgraduate medical courses during the last year, according to the *Army and Navy Journal*, as the result of the policy inaugurated by Surgeon General Stitt. The work of the navy medical corps has broadened until now it treats the industrial hazards of about 35,000 civilian employees, conducts the sanitary education of a large native population in widely scattered islands, and treats 15,000 veterans at the naval hospitals. Naval medical officers are encouraged also, when stationed near medical institutions, to take up courses of study.

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 25, 1925.

Annual Meeting of the British Medical Association

The ninety-third annual meeting of the British Medical Association was held at Bath. At the representative meeting, several medicopolitical subjects of great interest were discussed.

INDIRECT METHODS OF ADVERTISING

The subject of indirect methods of advertising has been under the consideration of the council for some time. Last year a rather strong stand was taken that all contributions to the press and interviews should be anonymous; but it was felt that this had gone too far and might defeat the intentions of the council, which therefore took the course of laying it as a duty on the physician to see that certain conditions were observed by those who controlled the organ in which contributions appeared. The council endeavored to preserve the dignity and proprieties of the profession without unduly limiting the possibility of satisfying the requirements of the press. It therefore submitted the following paragraph: "From time to time there are discussed in the lay papers topics which have relation both to medical science and policy and to the health and welfare of the public, and it may be legitimate or even advisable that medical practitioners who can speak with authority on the question at issue should contribute to such discussions. But practitioners who take this action ought to make it a condition of publication that laudatory editorial comments or headings relating either to the contributor's professional status or experience shall not be permitted; that his address or photograph shall not be published; and that there shall be no unnecessary display of his medical qualifications and appointments. There is a special claim that practitioners of established position and authority shall observe these conditions, for their example must necessarily influence the action of their less recognized colleagues. Discussion in the lay press on disputed points of pathology or treatment should be avoided by practitioners; such issues find their appropriate opportunity in the professional societies and the medical journals." The recommendation was adopted.

A BUREAU FOR LOCUM TENENTS AND ASSISTANTS

It was decided to undertake a new activity—the formation of a bureau for the provision of locum tenents and assistants, under the auspices of the association, to operate in such centers as may be deemed desirable, and to set up the organization under the control of the association by means of a separate liability company.

INDIVIDUAL MEDICAL DEFENSE

A long discussion took place on a proposal that the association should undertake individual defense. This subject has been under consideration from time to time for fifty years. The objections were still considered to be too great, and the proposal was rejected by 97 votes against 72. Among the reasons for the rejection were the facts that individual defense was being competently conducted by the existing societies, that the financial position of the scheme would be insecure at first, and that it would be detrimental to the association to have to defend conduct that might be indefensible.

EFFECT OF LIGHT ON HEALTH

In the Section of Public Medicine, Dr. Leonard Hill opened a discussion on the influence of sunlight and artificial light on health. It was, he said, quite easy, by local concentration of an arc, or by a very hot sun, to heat parts of the body—for example, the head—to a high febrile temperature. Exposure in sun boxes or under glass might easily heat up the whole body. Overheating should be most carefully avoided. Cool open air and sun were good, hot midday sun bad, for the treatment of surgical tuberculosis, as Rollier had found in the Alps. Patients with chronic tuberculosis must be protected from heat and given exposure to cool morning sun or arc lamps in cool places. Active febrile cases should be treated by light with great caution, by minimal doses—for example, sky shine, not sun—and by exposure to cool air on verandas. Cases of arthritis, on the other hand, might be benefited by heat and ultraviolet rays together. Wounds and fevers did wonderfully well outdoors, as shown by war experience, and all hospitals should no longer be brick buildings, but bungalows with open-air wards, verandas, and unroofed open-air courts about which the beds could be run according to the weather. To build new brick hospitals in cities on the old plan was out of date and unjustifiable. They must teach people to get rid of smoke pollution, wear less clothes, and expose more of their skin to light and then, with the help of arc baths and more playing-fields, we could improve health a great deal in spite of the thousands of miles of mean streets that covered the manufacturing districts. Girls, by wearing low open-necked blouses and short skirts with artificial silk stockings, secured more ultraviolet rays. Men might well alter their dress and get rid of the close collar and long trousers. While exposure of the lower part of the leg to light and to cool air had been found to be a preventive of varicose veins, overexposure in cold winter weather might produce a chilblain-like erythema. Physiologic knowledge as well as fashion should rule dress, and prevent both overexposure and underexposure. It had been stated that artificial sun treatment could not approach the real article in curative effect. Hill's experience, however, had shown that arc-light baths, properly regulated and accompanied with advice as to exposure to cool open air, exercise and diet, could effect cures in London which appeared to be no less good than those reported from alpine sanatoriums. To eliminate tuberculosis from cattle, just as from human beings, the important point was to secure adequate exposure to light and air. The practice followed by many farmers of shutting milch cows up in stables during the winter and limiting ventilation, with the idea of promoting a bigger yield of milk by warmth of the stable, should be prohibited. Cattle might be given arc-light baths in winter no less than children in schools. For cattle it was of no less importance to give food in winter which is rich in fat-soluble vitamin A. Grass-fed cattle give milk much richer in this vitamin than cattle fed on dry winter fodder.

INSOMNIA

In the Section of Neurology and Psychological Medicine, Dr. Robert Hutchinson initiated a discussion on insomnia. He divided insomnia into two classes, primary and secondary, the latter being due to some physical discomfort, such as pain, fever or cough. The primary cases were due either to mental discomfort or to the memory of it. The treatment of insomnia due to physical discomfort was necessarily the treatment of that discomfort. In the case of primary insomnia, the patient had probably been exaggerating in his own mind the results of not sleeping, and one might certainly explain to him that there was no fear of his either dying of insomnia or of going mad as a result of it—both of which dreads probably had been preying on his mind. One might also point out that health could be maintained on a much smaller allowance of sleep than most people habitually took, and that complete rest and muscular relaxation were to a large extent

a substitute for it. If the patient could only be made to take up this mental attitude to his trouble, it was a big step towards curing the insomnia, for the latter was often being kept up through autosuggestion; the patient did not sleep because he went to bed dreading that he would not. If he could be made to snap his fingers at the insomnia, it would often disappear.

FOOD PRESERVATIVES

It having come to the notice of the Public Health Committee that certain proprietors were endeavoring to bring pressure to bear on the government departments concerned, the committee drafted a recommendation, which was endorsed by the council. This recommendation was approved by the representative body, and will be sent to the government department in question. It runs as follows: (*a*) The representative body is satisfied from the experiments made from the recorded cases, and also from the fact that other countries have discontinued their use, that it is essential in the interests of public health that boric acid and borons should not be used as food preservatives. (*b*) While recognizing that there are difficulties inherent in this country, due to the lack of cold storage facilities and efficient means of transport, which do not exist to the same extent in America and other foreign countries, the representative body is of opinion that, as a matter of principle, it would have been better if the example of other countries in prohibiting entirely the use of preservatives and metallic and other toxic coloring matters in foods could have been followed in the draft regulations re food preservatives, etc., issued by the ministry of health. (*c*) The members of the representative body draw particular attention to the evils that have arisen in their own experience from the importation of liquid eggs preserved with boric acid, and the representative body considers that it is essential from the public health point of view that liquid eggs preserved with boric acid or other preservative should be prohibited at once. (*d*) Subject to the foregoing recommendations, the representative body places on record its approval of the draft regulations (issued by the ministry of health, Feb. 17, 1925) with regard to preservatives, etc., in food.

RHEUMATIC INFECTION IN CHILDHOOD

In the Section of Diseases of Children, Dr. F. J. Poynton said that he believed that the tonsils were an important site of infection. He knew that skilled enucleation would not prevent a first attack of rheumatism and acute carditis of extreme severity occurring some years later. Also an acute and crippling attack of carditis might directly follow removal of tonsils in the rheumatic patient. But the successful removal of unhealthy tonsils was a valuable prophylactic step, if, undeterred by exceptions, we viewed the problem on broad lines. Every case must be considered on its merits, and he did not favor routine action. He held that the teeth and gums of children should be kept as healthy as possible, but he could trace no clear connection between acute rheumatism and dental disease in childhood. The problem today was, Can we, by concerted efforts, protect our rheumatic children efficiently, and are we justified in pressing on the public the great need of its assistance? For many years he had held that such a step, if undertaken doggedly and earnestly, would in due time, but not rapidly, revolutionize the entire subject of the treatment of organic heart disease.

Prevention of Diphtheria: Disapproval of New York System

A report has been issued by the London County Special Services Subcommittee regarding the question of adopting in London schools the treatment carried out by the department of health of New York City for rendering school children immune to diphtheria. The subcommittee states that it understands that the ministry of health is conducting inquiries with regard to the immunization of the staffs of fever hospitals and in connection with maternity and child welfare work. It is advised that these lines of investigation should be explored thoroughly before further consideration is given to the question of immunization of children of school age, and adds that it is of the opinion, therefore, that it is not advisable at present that toxin-antitoxin treatment in connection with the prevention of diphtheria should be adopted as part of the council's scheme of medical treatment of school children.

Research Work in India

The annual report for 1924 of the Calcutta School of Tropical Medicine Institute of Hygiene, and Carmichael Hospital for Tropical Diseases, is now available. Lieut. Col. J. W. D. Megaw, the director of the school, writes that the supply of European research workers for India is falling off. The best young men from the British schools are no longer attracted, and he suggests that young Indians should be trained to take an increasing share of the work. But the family of the young Indian opposes a career offering little prospect of financial success. The cooperation of European and Indian investigators, of the state, of organized bodies and of individual philanthropists, was a feature of the scheme drawn up for the school about fifteen years ago by Sir Leonard Rogers and definitely put into operation in 1920. The Indian Tea Association supports researches into kala-azar. The Indian Jute Mills Association provides grants for the hookworm department, which also investigates other helminthic infections. The Indian Mining Association assists the department devoted to research in intestinal diseases, for cholera is prevalent in the Jheria coal fields, in both the epidemic and the sporadic form. The inquiry into the incidence of leprosy is financed by the Indian Research Fund Association. Dr. E. Muir continues the important work begun in Calcutta by Sir Leonard Rogers, and both have collaborated in the preparation of a book giving the latest results of leprosy research. Dr. Muir reports that the results show that "leprosy can without difficulty be diagnosed at an early stage in the majority of cases, and when diagnosed and thoroughly treated at such a stage it can be checked and all active signs got rid of, patients remaining free from the disease for the rest of their lives, provided they are able to maintain the resistance of the body and to remain free from all diseases that predispose to leprosy. As such early cases are practically not infectious, their early treatment would diminish the chance of a new generation of lepers." A department of the school is devoted to diabetes, which is distressingly prevalent among the educated classes in India. Researches show that physical exercise plays a very important part both in preventing the disease and in the treatment. A new branch of work is the Pasteur Institute, which was opened at the end of May, 1924, and received in the seven months to the end of the year nearly 1,500 patients, more than one fourth of whom were bitten by jackals. Colonel Megaw is able to confirm the opinion he has entertained for some years that there is a typhus-like fever in certain parts of India which is conveyed to man by ticks from some animal of the jungle. The fever closely resembles the spotted fever of the Rocky Mountains and may be identical with it. A view put forward by Colonel Megaw some years ago, and confirmed by further researches, is now accepted; namely, that the overfeeding of infants with sweetmeats and carbohydrates may be an important factor in the prevalence of infantile cirrhosis of the liver. Certain investigations would indicate that "epidemic dropsy," which is closely related to beriberi, is due to the eating of fermented rice. Colonel Megaw holds that immunity against epidemic dropsy cannot be assured unless the preparation and storage of rice (the staple food of the people of Bengal) is placed on a satisfactory basis.

BELGIUM

(From Our Regular Correspondent)

July 15, 1925.

Yaws or Syphilis

Before the Société belge de dermatologie et de syphiligraphie, Drs. Broden and Bernard discussed recently a case presenting juxta-articular nodes near the elbow. While very frequent in the natives, these nodes are exceedingly rare in white persons. The present case is about the tenth reported in the literature. Various affections may play a part in the etiology of this syndrome, syphilis and yaws being the most frequent. The theory that syphilis is the sole cause cannot be sustained, for it seems evident that yaws must frequently be incriminated. Also Broden and Bernard oppose the idea of an exclusive syphilitic origin, which has recently been again advanced. While the two isolated and independent European cases of De Quervain and Gougerot make it possible to affirm that in Europe, at least, there is no other possible cause than syphilis, it must be admitted that when natives or Europeans who have lived in the colonies are concerned it can no longer be affirmed.

Yaws or syphilis? The similarity in the spirochetes, the identical seroreaction for the two diseases, and the disappearance of the symptoms following the administration of iodids, arsphenamins and bismuth render a differential diagnosis almost impossible.

The Activities of a Physician in the Large Coal Mines

The Académie royale de médecine has awarded the Melsens prize to Dr. Stassen for his recently published work on the activities of a physician in a large modern coal mine. His work contains chapters on the prevention of industrial accidents, the physiologic conditions of work in mines, the prevention of ancylostomiasis, fatigue and overtaxing of the eyes (nystagmus of miners), furunculosis and inflamed hygromas, affections of the respiratory tract, and the general organization in coal mines of medical services and services of industrial hygiene. Through the collection and interpretation of statistics it was possible to interest the management of the mines in the part that medicine could play in economic administration.

The Branch of the Red Cross on the Congo

The first medical aid station for the natives has been established at Pawa in Ituri, by the Red Cross of the Congo. Pawa is located 2,000 kilometers (more than 1,200 miles) from Leopoldville, the distance being traversed by river, automobile or caravan. The station consists of a small hospital, a dispensary, a laboratory and a supply of the most needed drugs. Pawa was chosen for the first station of the Red Cross of the Congo because it is located in a region (Nepoko) in which the population is particularly dense and in which there is no other medical service, notwithstanding the fact that leprosy, yaws and syphilis are widely prevalent.

A second station will soon be organized at Bambili (in lower Uele), at the joint expense of the Red Cross of the Congo and the Compagnie cotonnière congolaise. The region about Bambili contains a large native population, and medical activities will be carried out here for the benefit of the blacks, who are already used to contact with Europeans; that is to say, under entirely different physiologic conditions than prevail in the vicinity of the station at Pawa. The annual budget of each of these two medical stations is 300,000 francs, and its range of activity and influence is approximately 40,000 square kilometers.

Postoperative Tetanus

Before the Société clinique des hôpitaux de Bruxelles, Drs. Renoirdre and Lefèvre de Arric recently presented a case of tetanus that developed the tenth day following a cholecystectomy. During the intervention, a slight loosening of a ligature caused a small quantity of bile to contaminate the operative field. The tetanus was cured by means of an antitetanic serum administered internally. The writers think it was a case of tetanus of probably intestinal origin, the operative wound having been contaminated by the contents of the biliary tract. In this connection, Gratia has reported that, according to researches carried out in Peking, *Bacillus tetani* is frequently found in the intestinal contents and in the bile of Chinese operated on. In fact, at the Peking Hospital it has become a routine practice to inject antitetanic serum before performing a laparotomy.

NETHERLANDS

(From Our Regular Correspondent)

July 15, 1925.

Prophylaxis of Scarlet Fever

Drs. Van den Hoeve and Terburgh believe that scarlet fever results solely from infection from the throat of a person with scarlet fever and that all fear of infection from epidermal scales should be abandoned. The period of quarantine, which is usually from forty to fifty days, could be shortened. If the inflammation in the throat had cleared up, patients might be permitted to attend school or to return to commercial and industrial life.

Immunization Against the Plague

Addressing the Netherlandic Association of Tropical Medicine, Dr. Flu recently discussed various immunization measures against the plague and presented the results of his researches on various animals—guinea-pigs, rats, rabbits and monkeys—in which the question of actual immunization was tested by the subsequent injection of virulent plague bacilli or by bringing the experimental animals in contact with a large number of plague-producing fleas under as natural conditions as could be devised. Aside from inoculation, immunity in animals that have survived the plague does not always protect them from a new infection. It seems, therefore, useless to expect to obtain an artificial means of protection against the natural plague that will prove efficacious in 100 per cent. or even in any high percentage of cases. Nevertheless, three consecutive injections of an aqueous extract of virulent plague bacilli will immunize the guinea-pig. The author has succeeded in protecting 63 per cent. of the animals against subsequent infection with very virulent bacilli. The method has not been applied to human beings as yet. One might, however, inoculate some of the persons employed in the cleaning of dwellings, while the remainder served as controls.

Cancer of the Stomach

Before the clinical society of Rotterdam, Dr. Schalij has presented his observations on five cases of cancer of the stomach in patients in the 20-25 age group. Four young men and one young woman were affected. The appearance of cancer in this age group is usually regarded as rare, but it seems that similar cases of neoplasm in young persons are becoming more frequent.

Hygiene in the Schools

At a recent meeting of school physicians, Dr. Idzerda stressed the importance of the notification of infectious diseases by physicians and the observance of quarantine. The attending physician is not the only one who should interest himself in this important question. It is equally the duty of the school authorities and the physicians in charge of school inspection.

Dr. Kroon has studied the question of the instruction in hygiene which should be given to teachers. The assembly of

school physicians has decided to use its influence to secure a better organization of this instruction. It is conceded that the instruction in hygiene for the teaching personnel should be given by physicians, and it is also held that physicians should be represented on the examining board. The course would include not only school hygiene but also general hygiene.

The Netherlandic Congress of Natural Sciences and Medicine

DRAINING OF THE ZUIDER ZEE

At the twentieth session of the Nederlandsch Natuur en geneeskundige Congress, held recently in Groningen, Professor Koch presided over the medical section. An especial interest attaches to the address by Mr. Wortmans on the drainage operations in the region of the Zuider Zee. The preliminary work in the immense undertaking of draining this landlocked inlet, formerly a lake, will consist in the construction of a dike, which, it is estimated, will take eight years. It is thought that the complete work will require twenty-five years. The draining of this great inlet of the sea, which is 85 miles long, will add an area of 225,000 hectares (560,000 acres) to the territory of the Netherlands, which is equivalent to about one fourteenth of its present area. The estimated cost of the undertaking is 400 million florins, or approximately 160 million dollars.

SURGICAL TREATMENT OF BRAIN TUMORS

Professor Laméris of Utrecht presented the results of his observations in 300 cases of surgical treatment of brain tumors. The intervention is of an exceedingly grave character. The immediate mortality in tumors of the cerebrum is 40 per cent.; in tumors of the cerebellum, 50 per cent., and of the pontile region, 75 per cent. The high mortality is due not so much to hemorrhage or infection as to the weak resistance of the patients themselves. The author is an advocate of the one-stage operation and of immediate suture without drainage. In a number of cases he favors decompressive trephining.

Professor Winkler of Utrecht discussed psychic disorders and the value of roentgenographic diagnosis in tumors of the brain. He emphasized that roentgenographic diagnosis should be based chiefly on modifications of the bones and the blood vessels and not on the direct visibility of the tumor. With reference to psychic disorders, Winkler states that they are practically always found associated with brain tumors if a diligent search is made. In this connection, it is advisable to study a considerable number of psychoses with an endeavor to discover whether there is not an anatomic equivalent in observed disorders.

DIABETES AND INSULIN

Professor Hijmans van den Bergh of Utrecht does not consider diabetes a disease entity but a multiform affection. Likewise, the treatment should not be identical in all cases; every patient must be carefully observed in order that a suitable regimen may be prescribed. The goal to be reached is not solely to eliminate the glucose from the urine. Hyperglycemia is the main thing to combat, but only within certain limitations, for a certain degree of glycemia seems to provoke the pancreatic internal secretion and that should be the goal of the treatment.

ANTIDIPHTHERITIC IMMUNIZATION

A communication was presented by Mr. Aldershoff of Utrecht on active immunization against diphtheria. About 300 persons die of diphtheria in the Netherlands, annually. The search for carriers has not given convincing results. An endeavor should also be made to discover a method that will protect children against contagion. Behring's toxin-antitoxin mixture, in the form of intracutaneous injections, has been used by Deventer. Of 4,000 children vaccinated, only four contracted diphtheria later, whereas, among the 2,000 controls, twenty-eight cases developed. The author thinks, however, that Behring's intracutaneous method is too difficult to be employed on a large scale. He prefers the subcutaneous route and employs in this method a product similar to the mixture recommended in the United States. He prepared it himself at the Rijksserologisch Institut of Utrecht and has designated it "Tau." It differs slightly from the Banzhof vaccine and causes less necrosis than the latter. It is asserted that total immunization is attained after three injections at weekly intervals.

VIENNA

(From Our Regular Correspondent)

July 15, 1925.

Influence of Tumors on Sex Manifestations

In an address delivered by Professor Halban before the Gesellschaft der Aerzte in Vienna, he discussed the influence that tumors of (1) the gonads, (2) the pineal body and (3) the suprarenal cortex exert on the manifestations of sex. Reports of from eighty to 100 such cases have been published. Tumors of the pineal body occur especially in boys and cause sexual precocity; in girls, however, tumors of the first and the third class are more frequent. A systematic study of these cases revealed a group that appeared before puberty; for example, in a girl, aged 2, with an ovarian tumor, the mammae were developed as in a 20-year-old girl and produced colostrum. The child has a hair growth on the external genitalia, and the onset of the menses is imminent. In other girls of this type, heterosexual signs appear: beard formation, masculine hair growth, and a deep rough voice. In a third group, early signs of masculine and feminine development appear side by side. In adults, a modification of sex characteristics may occur; for example, in a woman, aged 30, the menses ceased, a beard began to appear, and the voice became deep and rough. An examination revealed a tumor of the suprarenals or of the ovary. In men, such modifications of sex characteristics are rather rare (Bittorf reports a case of effemination of a man, aged 39, due to a tumor of the suprarenals). There are various attempted explanations for the effects of tumors on sex manifestations. Askanazy of Geneva, Starling of London, and Berblinger of Berlin have pointed out that hormones are formed in the tumor, which cause these changes. It has been maintained that destruction of the pineal body in itself induces sexual precocity, but another investigator has reached just the opposite view. In tumors of the suprarenal cortex (only tumors of the cortex and not tumors of the suprarenal gland proper are to be considered as exerting a causal action), not only isosexual but also heterosexual precocity occurs (also mixed manifestations). The theories that would explain this disturbance of function are, however, as uncertain as those just cited. Also tumors of the gonads cause changes in sex manifestations, which are conceived of as influencing secondary characters. Halban holds, however, that hormonal theories, and likewise the theories of the followers of Herbst, according to which all human beings have a bisexual anlage, do not furnish an adequate explanation of these processes. He believes that the tumors exert a "hyperprotective" influence; that is to say, they bring about the development of an already existing anlage which cannot develop under the influence of the normal hormones. Therefore, such pathologic phenomena commonly recede when the tumor is removed. The "hyperprotective" action of the tumors extends rather to the isosexual than to the heterosexual characters. In persons with hermaphroditic tendencies, heterosexual or isosexual changes are more likely to occur than in isosexual individuals. The histologic examination of such tumors shows them to be, in

part, malignant and, in part, benign growths; that is, merely hypertrophies. When (as in sarcomas) changes in sex manifestations are noted and no epithelium is present, we can assume only a function of the tumor, which causes the hypersecretion of the organ. Nor can we be sure that such changes are brought about by the destruction of the gonads by tumors, since following castration the appearance of heterosexual characters in man has never been observed. It is known, however, that the suprarenals influence the development of sexual characters. Their hypertrophy causes an overdevelopment and their destruction an underdevelopment. It has also been noted that hermaphrodites have an increased disposition to tumors of the suprarenals. Further careful researches on cases that come under this head will be needed before a final judgment on these complicated conditions can be pronounced.

Fifteen Hundred Cases of Cancer in Which the Wertheim Operation Was Employed

At the last meeting of the Gesellschaft der Aerzte of Vienna, Professor Dr. Weibel set forth the results secured to date with the radical operation for cancer of the uterus by the Wertheim method, which was first introduced twenty-five years ago. Under his supervision, 1,500 women have been operated on by this method, and in more than 1,000 of these cases the after-control extended over more than five years. Wertheim's method, including removal of the uterus and of the parametrium, free dissection of the ureter and extirpation of the glands, was carried out in all its details. Table 1 gives a survey of the permanent cures accomplished. The cases are distinguished as incipient, mild, severe and very severe.

TABLE 1.—*Results in Fifteen Hundred Wertheim Operations for Cancer of the Uterus*

	Incipient Cases	Mild Cases	Severe Cases	Very Severe Cases
Percentage of permanent cures among the total operated on	87	53	28	14
Percentage of cures among those surviving the operation	98	61	34	19

A cure was effected in nearly all incipient cases, in more than half of the mild cases, and in almost a fifth of the severest cases. Unfortunately, only 6.5 per cent. of the cases were incipient, and only 42 per cent. were mild. Only 51 per cent. of the cases were operable, the percentage ranging from 40 to 65 in the various age groups. The final results are conditioned to a great extent by the peculiar malignancy of the cases of carcinoma of the cervix of the uterus and by the danger involved in the radical operation. The primary operative mortality was steadily reduced; for the first 1,000 cases it fell from 42, to 16 per cent.; and for the next 500 cases it dropped to 8 per cent.; in the incipient cases it is now only 3 per cent. Almost half of the primary fatal results arose from infection; 10 per cent. from cardiac insufficiency and urologic complications; 8 per cent. from loss of blood, and 4 per cent. from pneumonia. The primary operative mortality rises with the severity of the case and the extent of the infection, as will be seen from Table 2.

TABLE 2.—*Primary Operative Mortality Classified According to the Degree of Severity*

	Per Cent.
Incipient cases	11
Mild cases	13
Severe cases	18
Very severe cases	26

Among the first thousand patients, 22 per cent. presented cancerous lymphatic glands at the time of the operation. In only nineteen of these cases was a cure extending over five years effected. In only 2 per cent. of all cases was it necessary to perform resection of the ureter; in the other cases a free dissection of the ureter, which is seldom affected by carcinoma, sufficed. In the 1,500 cases, resection of the rectum was resorted to in only two instances. In 3 per cent. of the cases there arose cystovaginal fistulas; in 6 per cent., ureteral fistulas developed, nearly all of which, however, healed later, and in 1 per cent. a bladder resection had to be performed. Of the recurrences, 80 per cent. originated in the regional lymphatic glands, while 20 per cent. were of local origin, 44 per cent. developed within one year after the operation; 26 per cent. within two years; 14 per cent. within three years; 10 per cent. within four years, and 5.5 per cent. within five years. Recurrences were noted also after five years, and even after ten years, but were exceedingly rare. The statistics show that cancer of the cervix in young married women has no worse prognosis than formerly, the war having exerted no demonstrable influence. Of the 1,500 patients, 1 per cent. were pregnant, all of whom were locally operable. The absolute value of the Wertheim operation is shown in Table 3.

TABLE 3.—*Results in the First Thousand Wertheim Operations*

	Cases	Percentage of Those Operated on	Percentage Surviving the Operation
Permanent cures	1-250	42	57
Permanent cures	1-450	42.5	53.3
Permanent cures	1-1,000	42	48

The value of the abdominal radical operation for carcinoma of the cervix is now definitely established. No marked improvement in the percentage of cures can be expected. The primary operative mortality, however, may be further reduced. The most important thing is the early diagnosis, since only the incipient cases are nearly all cured. During the discussion that followed the address, the possibilities of the Wertheim operation were recognized, but many surgeons expressed a preference for the vaginal method, which, carried out under local anesthesia, produces just as good results, while the operative mortality is lower.

PRAGUE

(From Our Regular Correspondent)

July 6, 1925.

Exhibit of Public Health Activities

A public health exhibit held in Hradec Kralove, Bohemia, from May 31 to July 6, demonstrates the progress in public health in Czechoslovakia since the creation of the independent state in the provincial counties. Hradec Kralove is a flourishing city in northeastern Bohemia and has worked out a model organization of public health services including both official and nonofficial agencies. The exhibit concerns prenatal care, infant welfare, school hygiene, the campaign against venereal diseases and tuberculosis, the campaign against trachoma, the alcohol problem, dental care, physical education, hospitals, watering places, sanitation, nutrition, the campaign against cancer, life extension, prevention of accidents, first aid and rural hygiene. During the exhibit, the various associations in the county are holding their annual meetings. It is planned to hold similar exhibits yearly, in some progressive provincial city.

Meetings at Bratislava and Liberec

The annual meeting of the Central Union of Czechoslovak Physicians was held, June 28-29, in Bratislava. Since the creation of its medical school, Bratislava has developed into an important center for medical education both undergraduate and graduate. Unlike the medical schools in Prague and Brno, the Bratislava school is not handicapped in its teaching by crowds of foreign students. The teaching staff of the

medical school, which was recruited from the younger generation of scientific workers at the Prague medical school and some of the larger country hospitals, has become the center of many new endeavors in scientific medicine. The *Bratislava Medical Journal* was founded as the official organ of the Bratislava Medical Faculty and is a monthly periodical edited by the Society of Czechoslovak Physicians in Bratislava. The regular weekly meetings of this society bring the members of the teaching staff of the faculty in touch with the practitioner. In each number of the *Journal*, summaries of the original articles appear in French and English. At the occasion of the meeting mentioned above, the *Journal* issued a special number in which progress in medicine and public health in Slovakia is summarized. Account is given of the development of public hospitals in Slovakia, which is the most striking feature of the progress. The general hospital in Kosice should be named first, which was developed into an up-to-date institution with 800 beds. All the counties in Slovakia are now equipped with public hospitals, which gradually are being developed to contain special departments for all branches of medicine. The special number of the *Journal* describes the improvements in the watering places which are so numerous on the southern slope of the High Tatras. Above all, the work for the improvement of public sanitation and the campaign against infectious diseases carried out by the public health service with the most modern methods deserve recognition. Bratislava was therefore chosen as the meeting place of the union. The introductory address was presented by Dr. J. Kostlivy, professor of surgery at the Bratislava Medical School. He expressed the willingness on the part of the medical profession to cooperate further in the improvement of public health conditions in Slovakia but did not hide the fears and anxieties with which the medical profession regards the progressing restriction of private practice. He declared the free choice of physicians in the scheme of national sickness insurance to be the only measure that can satisfy both the medical profession and the public. The general meeting of the German Physicians in Czechoslovakia was held in Liberec, where measures for the prevention of disease were advocated in preference to purely curative measures.

Visit of Madame Curie

Mme. Curie, the discoverer of radium, has recently visited Czechoslovakia as the guest of the Czechoslovak government on her return to Paris from her native country, Poland. For the first time she saw the places from which the ore was brought, from which she succeeded finally in isolating radium. She visited, in Prague, the State Institute for the Study of Radium and the clinic of Prof. R. Jedlicka for the study of medical radiology. Accompanied by former pupils from her Paris laboratory, Mme. Curie visited also the watering place Jachymov, where she descended into the mine from which the ore was taken to be shipped to her Paris laboratory. Her chief interest was centered on the presence in the Jachymov ores of ionium, which she is studying at present and from which she expects further advances in the treatment of malignant growths because she anticipates that with ionium it will be possible to develop a more prolonged and moderate treatment than has been possible with radium.

The Army Medical Journal

The *Czechoslovak Army Medical Journal*, a new publication, will be the official organ of the army medical advisory council, which was recently appointed by the ministry of national defense. The *Journal* will appear quarterly and will contain articles from the fields of medicine, veterinary surgery and pharmacy as far as they concern special needs of the army. The publication of this periodical is the culmination of the efforts of army surgeons who have long felt the need of an independent periodical. The editor of the *Journal* is General Franz, a phthisiologist.

Vital Statistics

The state statistical bureau has recently issued the statistical manual of the Czechoslovak Republic. The first manual was published five years ago, shortly after the creation of the independent state of Czechoslovakia. Comparison of these two volumes shows remarkable progress in this field of public service. The collection of vital statistics is of especial interest to the medical profession. The publications of the state statistical bureau are summarized and statistical investigations carried out by other bureaus and private individuals are abstracted and accompanied by detailed bibliographies. The section of vital statistics in the state statistical bureau is in the hands of Dr. J. Netusil, who studied in the United States. The statistical bureau is adopting modern methods of collecting data, has introduced individual death certificates with the international classification of causes of deaths, and is planning to take the registration from the hands of the churches and introduce the institution of lay registrars.

BERLIN

(From Our Regular Correspondent)

July 15, 1925.

"Dysoxidative Carbonuria"

At the last meeting of the Society of Internal Medicine, Professor Bickel and Dr. Kauffmann-Cosla (Bucharest) reported investigations that they have been undertaking to establish a new disease entity: dysoxidative carbonuria. They have found that in diabetes, aside from the carbon contained in sugar and in fat derivatives (ketone bodies), frequently large quantities of other carbon compounds resulting from sugar metabolism are found in the urine. This carbon, which is more oxidized than carbohydrate but less so than carbon dioxid, can be made to disappear by the injection of proper quantities of insulin, just as sugar may be. The same thing was found to be true with reference to urinary carbons in avitaminoses.

After the foregoing points had been established, Bickel and Kauffmann-Cosla examined other patients with a view to finding evidence of insufficiently oxidized carbon compounds in the urine and found them in a number of instances, which were associated with a marked feeling of illness, loss of weight in spite of a hearty appetite, but no other pathologic findings—not even sugar in the urine. This observation would seem to explain the cases of diabetes in which, following the injection of insulin, the sugar disappears from the urine, while the feeling of illness remains. In such cases, in the opinion of the investigators, insulin treatment should be continued until also these carbon compounds have disappeared from the urine.

The new method of research will doubtless be used, for the time being, only in the larger institutes. The two investigators are endeavoring, however, to discover a simpler method that will enable any practitioner to make a diagnosis. It can be assumed with certainty that, within a short time, the statements of Bickel and Kauffmann-Cosla will be inquired into in most hospitals. If they are confirmed, it may be assumed that they will furnish the starting point for the elucidation of many hitherto obscure disease conditions. If dysoxidative carbonuria is of frequent occurrence, that would throw light on many things connected with constitution and disposition. If the carbon present in the food is not adequately utilized, a person, in spite of a large amount of food ingested, may be hungry and may show less resistance to tuberculosis and other infectious diseases, as was seen, during the food scarcity of the war, in thousands of instances.

Marriages

JAMES F. HALL, Lieutenant Colonel, Medical Corps, U. S. Army, Fort Humphreys, Va., to Mrs. Guy T. Scott of Washington, D. C., recently.

MARTIN F. SLOAN to Miss Julia Alice Willms, both of Baltimore, at Washington, D. C., June 16.

ERNEST CHARLES BURHANS, Lansing, Mich., to Miss Lucinda Monroe of Portland, June 16.

JOHN PRESTON SUTHERLAND to Miss Catherine Grovenia Stewart, both of Boston, in June.

ALAN F. GUTTMACHER, Baltimore, to Miss Leonore Faith Gidding of New York, July 29.

HOWARD M. WHEELER, Helena, Okla., to Miss Ethel McCune of Kansas City, Mo., July 2.

RALPH W. HAYWOOD, Salem, Mass., to Miss Margaret Knight of Holyoke, June 27.

DIMITER GEORGE FOURNAD to Miss Selma Viola Bredenberg, both of New York, July 22.

OLIVER P. HENRY to Mrs. Mary Hall, both of Mount Sterling, Ky., at Paris, June 6.

CHARLES JAMES ROACH to Miss Dorothy Sutton, both of Zanesville, Ohio, July 16.

IRVING CLAMAN to Miss Leoni Camille Neuman, both of New York, July 19.

AUGUSTUS S. WARNER to Miss Anna May Haury, both of Chicago, June 30.

JOHN RUSSELL BAUM to Miss Daisy Chisnhall, both of Chicago, April 5.

ISAAC COHN to Miss Anna Stein, both of Brooklyn, July 20.

Deaths

Vernon Kenneth Graham ✠ Kansas City, Mo.; Bennett Medical College, Chicago, 1914; member of the Iowa State Medical Society; formerly tuberculosis examiner and specialist for the U. S. veterans' bureau, St. Louis; aged 36; died, July 16, at the U. S. Veterans' Hospital, No. 67, of heart disease and tuberculosis of the spine.

Stuart T. Dromgold, Elmore, Ohio; Physio-Medical Institute, Cincinnati, 1877; member of the Ohio State Medical Association; president of the Ottawa County Medical Society; for twenty-five years member of the board of education; aged 73; died, July 15, of cerebral hemorrhage.

Lawrence Howard Roblee ✠ Chicago; University of Michigan Homeopathic Medical School, Ann Arbor, 1912; served in the M. C., U. S. Army, during the World War; consulting urologist to the Illinois Masonic Hospital, where he died, July 24, of chronic interstitial nephritis, aged 37.

Leonard Edwin Hanson ✠ Wallace, Idaho; University of Pennsylvania School of Medicine, Philadelphia, 1908; president of the Shoshone County Medical Society; medical director of the Wallace Hospital; aged 46; died, July 15, at the Deaconess Hospital, Spokane, of nephritis.

Louis Theophile Donaldson ✠ Reserve, La.; Medical Department of Tulane University of Louisiana, New Orleans, 1879; past president of St. Charles-St. John Parish Medical Society; formerly health officer and president of the parish board of health; aged 71; died, July 15.

Norman Davis Smith ✠ Swarthmore, Pa.; Medico-Chirurgical College of Philadelphia, 1909; served in the M. C., U. S. Army, during the World War; on the staff of the Taylor Hospital, Ridley Park; aged 43; died suddenly, July 22, of heart disease.

Zeno Leonidas Weaver, Williamsport, Md.; Medical College of Virginia, Richmond, 1900; member of the Medical and Chirurgical Faculty of Maryland; aged 49; died, July 19, at the Washington County Hospital, Hagerstown, of appendiceal abscess.

Benedict Einarson ✠ Chicago; University of Michigan Homeopathic Medical School, Ann Arbor, 1882; College of Physicians and Surgeons, Chicago, 1890; on the staff of the Englewood Hospital; aged 70; died, July 25, of cerebral hemorrhage.

James Buchanan Stoner ✠ New York; Jefferson Medical College of Philadelphia, 1885; a retired surgeon of the U. S. Public Health Service; aged 64; died, July 22, at U. S. Marine Hospital, No. 21, Stapleton, Staten Island, N. Y.

Arthur Thompson Browne, Winston-Salem, N. C.; Memphis (Tenn.) Hospital Medical College, 1913; member of the Medical Society of the State of North Carolina; aged 38; died suddenly, July 18, of septicemia and endocarditis.

Charles L. Weeks, New York; Bellevue Hospital Medical College, New York, 1891; visiting physician to St. Vincent's Hospital, and for twenty years on the staff of St. Joseph's Home for the Aged, where he died, July 22, aged 55.

James Mortimer Clark, Chung King, China; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1920; served as a missionary of the Canadian Methodist Church in China; aged 35; died recently, of typhus fever.

Charles T. White, Tonkawa, Okla.; Missouri Medical College, St. Louis, 1899; member of the Oklahoma State Medical Association; aged 69; died, July 20, at the Wesley Hospital, Wichita, Kan., of nephritis, following neuritis.

Harry Yohe Horn, Coplay, Pa.; Jefferson Medical College of Philadelphia, 1879; also a druggist; formerly on the staffs of the Allentown and Sacred Heart hospitals; aged 66; died suddenly, July 17, of cerebral thrombosis.

Solomon Horace Kempner ✠ New York; Bellevue Hospital Medical College, New York, 1886; aged 62; died, July 8, at the Moses Ludington Hospital, Ticonderoga, of injuries received in an automobile accident.

Harry C. Harkness, Mansfield, Pa.; Chicago Homeopathic Medical College, 1896; member of the Medical Society of the State of Pennsylvania; aged 54; died, July 17, at Philadelphia, of heart disease.

Allen B. Wheelis, Los Angeles, Texas; University of Nashville (Tenn.) Medical Department, 1908; served in the M. C., U. S. Army, during the World War; aged 41; died, July 19, following a long illness.

William R. Lowman, Orangeburg, S. C.; College of Physicians and Surgeons, Baltimore, 1888; member of the South Carolina Medical Association; aged 58; died, July 15, following a long illness.

Claude Melvin Pearce ✠ Portland, Ore.; Jefferson Medical College of Philadelphia, 1899; member of the Pacific Coast Oto-Ophthalmological Society; aged 48; died, June 24, of interstitial nephritis.

John Bloomfield, Napoleon, Ohio; Medical College of Ohio, Cincinnati, 1879; Civil War veteran; for six years member of the county board of health; aged 83; died, July 12, following a long illness.

Christopher Allen Sanborn ✠ Redlands, Calif.; Bellevue Hospital Medical College, New York, 1882; member of the New Hampshire Medical Society; aged 70; died, July 18, of heart disease.

Gilbert Haven Hodgson, Tampa, Fla.; St. Louis University School of Medicine, 1911; served in the M. C., U. S. Army, during the World War; aged 37; died, July 22, at Asheville, N. C.

Aaron F. Markwith, Greenville, Ohio; Medical College of Ohio, Cincinnati, 1886; formerly city health officer; for nine years member of the board of education; aged 65; died, July 18, of asthma.

John A. Blackmon, Jackson, Tenn.; Vanderbilt University Medical Department, Nashville, 1882; member of the Tennessee State Medical Association; aged 66; died, July 17, at Memphis.

George Stewart Strathy, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1905; member of the American College of Physicians; aged 42; died, June 11, of pericarditis.

Bruce Colbert Wallace, Athens, Texas; Kentucky School of Medicine, Louisville, 1893; member of the State Medical Association of Texas; aged 56; died, April 3, of edema of the lungs.

Charles William B. Harbour, Tiffin, Ohio; Miami Medical College, Cincinnati, 1885; aged 62; died, July 20, at the Grant Hospital, Columbus, following an operation on the gallbladder.

Wesley Alfred Koch, Pekin, Ill.; College of Physicians and Surgeons, Chicago, 1901; Spanish-American War veteran; aged 48; died, July 22, at the Peoria (Ill.) State Hospital.

Jennie Belle Rozell ✠ Fairbury, Neb.; University of Nebraska College of Medicine, Omaha, 1924; aged 35; died, July 22, at the Lincoln General Hospital, of septicemia.

Auguste Joseph Pareti, St. Louis; St. Louis University School of Medicine, 1918; aged 35; died, June 30, at New Orleans, of chronic interstitial nephritis and uremia.

Archibald Herbert Babcock, Randolph, N. Y.; University of Michigan Homeopathic Medical School, Ann Arbor, 1879; aged 70; died, June 25, of cerebral arteriosclerosis.

John W. Baker, Batavia, N. Y.; Pulte Medical College, Cincinnati, 1887; for six years city health officer of Batavia; aged 62; died suddenly, July 24, of heart disease.

Sidney Johnston Vann, Westbourne, Tenn.; University of Georgia Medical Department, Augusta, 1900; served during the World War; aged 50; died suddenly, July 13.

Fred Hamilton Powell, Ottawa, Ont., Canada; McGill University Faculty of Medicine, Montreal, Que., 1885; L.R.C.P., London, 1886; died suddenly, May 4.

Ernest Henry Carpenter, Helena, Mo.; St. Louis University School of Medicine, 1903; aged 46; was killed, July 11, when an acetylene plant exploded.

G. L. Kennedy, Roseville, Ohio; Medical College of Ohio, Cincinnati, 1876; member of the Ohio State Medical Association; aged 77; died, July 16.

Isabelle Marie Gage, Kalamazoo, Mich.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1902; aged 59; died, July 18, of heart disease.

Oscar N. Gibson, Eldorado, Ill.; Miami Medical College, Cincinnati, 1887; aged 65; died suddenly, July 6, at Galatia, of cerebral hemorrhage.

Louis Boyd Allen, Mount Pleasant, Iowa; College of Physicians and Surgeons, Keokuk, 1880; aged 67; died, July 18, following an operation.

Thomas Jefferson Andre ✠ Schaller, Iowa; Rush Medical College, Chicago, 1882; aged 68; died suddenly, July 1, of angina pectoris.

James A. McIntosh, Chippawa, Ont., Canada; McGill University Faculty of Medicine, Montreal, Que., 1903; aged 46; died, May 12.

John William Gannon, Reserve Mines, Nova Scotia, Canada; McGill University Faculty of Medicine, 1918; aged 35; died, June 6.

Mugurdich C. Gabrielian, Philadelphia; Jefferson Medical College of Philadelphia, 1892; aged 68; died, July 7, of heart disease.

Charles Arthur Caplinger ✠ Wallace, Ind. (licensed, Indiana, 1902); aged 64; died suddenly, July 2, of heart disease.

Robert Emmett Clancy, Cairo, Ill.; University of Louisville (Ky.) School of Medicine, 1891; aged 56; died suddenly, July 22.

Austin M. Frame, Coolville, Ohio; Central College of Physicians and Surgeons, Indianapolis, 1880; aged 69; died, July 8.

Henry L. Rugely, Bay City, Texas; Jefferson Medical College of Philadelphia, 1861; Civil War veteran; aged 87; died, May 6.

Joseph E. Pope, Sageeyah, Okla.; Detroit College of Medicine and Surgery, 1887; aged 65; died, June 29, of nephritis.

David Bevan, Philadelphia; Jefferson Medical College of Philadelphia, 1891; aged 50; died, June 29, of heart disease.

Marcus V. Pool, Buckville, Ark.; Atlanta, Ga., Medical College, 1879; aged 67; died, July 9, of chronic nephritis.

James M. Norris, Butler, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1864; aged 83; died, July 2.

Mary Josie Tenny, Oskaloosa, Iowa; College of Physicians and Surgeons, Keokuk, 1876; aged 84; died, June 2.

Henry S. Skinner, Sapulpa, Okla.; College of Physicians and Surgeons, Chicago, 1883; aged 63; died recently.

John Wesley King, Bradford, Pa.; Jefferson Medical College of Philadelphia, 1889; aged 58; died, June 28.

Charles Willis Henry, Coon Rapids, Iowa; Rush Medical College, Chicago, 1884; aged 70; died, May 10.

William Allen Barr, Paris, Ill.; Rush Medical College, Chicago, 1892; aged 67; died, July 18.

William A. Synon, Platteville, Wis.; Rush Medical College, Chicago, 1882; aged 69; died, July 14.

Philip D. B. Gratton, Galatia, Ill. (licensed, Illinois, 1877); died, July 6.

Correspondence

IVY POISONING: ITS TREATMENT AND PREVENTION

To the Editor:—Krause and Weidman, in their paper (THE JOURNAL, June 27, p. 1996) on the preventive treatment of ivy poisoning, state that Schamberg introduced the method involving the introduction of tincture of *Rhus toxicodendron* by mouth in 1919.

The use of products from the poison ivy group of plants as remedies to *Rhus* dermatitis has a history similar to the general history of isopathy. However, as these poisonous *Rhus* plants are native to North America and Asia only, the beginnings of the use of isopathic remedies in this instance is to be looked for in these countries and not in Europe.

A review of the literature shows that, in the treatment of *Rhus* dermatitis, *Rhus* charcoal and *Rhus* ashes have been used externally; and *Rhus* infusions and *Rhus* tinctures have been used internally; and *Rhus* tinctures have been used hypodermically. There are also instances of *Rhus* poisoning from internal administration or accidental consumption.

In 1748, Kalm said of poison sumac (*Rhus vernix* L.), "Some people assured me that a person suffering from its noisome exhalations would easily recover by spreading a mixture of the wood burnt to charcoal, and hog's lard, upon the swelled parts."

In 1798, Horsfield stated that ashes of the leaves and wood of the poisonous *Rhus* were used as topical applications in *Rhus* dermatitis.

A quotation from Dakin in 1829 is interesting: "Some good meaning, mystical, marvelous physicians, or favored ladies with knowledge inherent, say that the bane will prove the best antidote and hence advise the forbidden leaves to be eaten, both as a preventive and cure to the external disease. I have known the experiment tried, which resulted in an eruption, swelling, redness and intolerable itching around the verge of the anus" (confirmed by Krause and Weidman).

The observations of homeopaths, extending over a hundred years, show that an excessive amount of *Rhus* poison when taken by mouth will cause irritation of the alimentary tract and does not prove any remarkable cures.

Schamberg, in 1916, announced that he had been able to protect persons susceptible to attacks of ivy poison by the internal administration of minute but increasing doses of the tincture of *Rhus toxicodendron.*

In 1918, Strickler advocated the treatment of severe cases of *Rhus* dermatitis by intramuscular injection of an alcoholic solution of *Rhus* poison.

Subsequent papers dealing with the use of the Schamberg and Strickler methods give case histories which do not necessarily prove that relief was secured, nor recovery hastened, nor immunity obtained through the use of the *Rhus* tincture. It has not been proved that the results observed might not have been obtained without such treatment. During treatment, new eruptions occurred on various places on the body remote from those originally affected when treatment commenced. It is doubtful, therefore, whether the treatment described proved either preventive or curative.

Of a total of seventy-six bed patients who received nothing but local treatment with calamine lotion at the University of California, ten patients, or 13 per cent., were discharged as cured after two days; twenty-five, or 33 per cent., were discharged as cured after three days; sixteen, or 21 per cent., were discharged as cured after four days; nine, or 12 per cent., were discharged as cured after five days; twelve, or 16 per cent., were discharged as cured after seven days, and no patient stayed as long as eight days without being dis-

charged as cured. This shows that nearly one half (46 per cent.) of the seventy-six patients were discharged as cured after three days' confinement. The results from the use of the Strickler and Schamberg treatments as published do not indicate that any less time elapsed between inception and recovery.

A study of the Strickler and Schamberg treatments should be more scientifically conducted, should include temperature, respiration, size and location of involved areas, measurements of swelling, blood pressure records, differential and total blood counts, and blood and urine chemical analyses, as well as definite control.

Definite quantities of the poison should be used. A "95 per cent. alcoholic preparation" of unknown poison content is too indefinite.

In testing for a decrease in susceptibility to *Rhus* poison obtained by the treatment, minimal toxic doses should be determined before and after treatment. This was not done by Krause and Weidman.

Neither the supposition that immunity to *Rhus* dermatitis may be inherited, nor the variation in the degree of susceptibility with age or regardless of age, proves that immunity may be acquired through the use of hypodermic injection of *Rhus* poison. The possibility of successive severe attacks of *Rhus* dermatitis during one season argues against the acquisition of immunity in this manner. It seems scarcely proper to speak of *Rhus toxicodendron* antigen until there is reason to believe that antibodies are formed as a result of the introduction of the poison, especially when these cannot be expected in view of the non-nitrogenous composition of the irritant.

Krause and Weidman report as a new finding that "local immunity is not developed by repeated attacks of ivy poisoning." This has been long known (McNair: Rhus Dermatitis, p. 145). Their report, that "there is no such thing as absolute (and probable permanent) immunity against ivy poisoning," accords with my belief, but was not proved by them, for they employed only the diluted poison as it is found in the sap, or an alcoholic solution of it containing an unknown quantity of poison. They did not try the poison highly concentrated and purified as did Warren in 1909. Their statement, "It appears that all of the commoner laboratory animals are immune to the virus," does not necessarily hold to the application of the highly concentrated and purified poison, nor does it apply to the internal administration of the poison. The relative immunity of rabbits and guinea-pigs to dermatitis from *Rhus* sap had been previously demonstrated by Crane, and of monkeys and rabbits by von Adelung.

The statement in my book, quoted by Krause and Weidman, "that species immunity in lower animals to *Rhus* is frequently due to protection of the skin and hair," was based on circumstantial and direct evidence: the circumstantial evidence of White that hunting dogs which have traversed woods infested with poison ivy are sometimes affected about the eyes; the direct evidence of von Adelung that out of ten rabbits tested with poison on shaved areas on the outer surface of their ears, three developed *Rhus* dermatitis. Of these three rabbits, one had a green leaf applied and observed for two days, and the other two had the "pure toxin" (not an alcoholic extract) applied. The use of the words "dogs" and "rabbits" in this connection is ambiguous, as there are many breeds of dogs and at least thirty species of rabbits in the United States, and their susceptibility may vary. No cases of *Rhus* dermatitis of the human scalp have been observed where the scalp is protected by a thick covering of hair. It is evident from the foregoing observations that hair does serve as a protection.

I doubt whether the fact that a great number of substances have been tried in the topical treatment of *Rhus* dermatitis shows that a substance cannot be found which will have an appreciable remedial value in *Rhus* dermatitis. In fact, I believe a preventive has been found in a substance which will chemically neutralize the poison; namely, ferric chlorid. Ferric chlorid is also a remedy in the incipience of the disease.

Ferric chlorid was sucessfully used by Browning in 1885 without knowledge of its chemical action on the poison. But I have found that this substance chemically neutralizes the poison. (McNair: Rhus Dermatitis, Chapter XVI, following the "seven-page list of vaunted remedies.")

By comparative tests, this substance has been found remedially superior to twenty-nine or more remedies.

In cases of ivy poisoning that actually develop and become acute, the treatment is based on the recognition of the nature of the injury. The effect of ivy poisoning is much like that of a burn, and the treatment suggested resembles that successfully used during the war in burn cases. The affected parts are first bathed with ferric chlorid solution, to neutralize the poison. The skin is dried, and melted paraffin is painted over it. A thin sheet of cotton is laid over the wound, and this also is covered with paraffin. The affected area is thus protected from the air and from rubbing, and new skin is given a chance to grow.

Regarding the paraffin treatment, Dr. Flagg says: "I have found melted wax to form instant relief from pain, burning and itching in old and young. The course of the disease is much shortened. A simple and easy method is to use a small swab of cotton and paint the parts with the melted wax. There is no danger, of course, from burning. With closed eyes the whole face may be painted. The least entrance of air beneath the mask or cast of wax requires sealing in the waxened part. I know from personal experience the instant relief from pain, burning and itching, and the return of sleep, which is not only grateful to the patient, to say nothing of the loss of valuable time and money."

The following references may be consulted:

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JAMES B. MCNAIR, Chicago.

"GASTRIC JUICE AS A GERMICIDE"

To the Editor:—In THE JOURNAL, July 25, page 273, appears an editorial comment discussing how bacteria enter the intestinal tract in spite of the germicidal action of the gastric juice.

Is it not usually assumed that the new-born baby's intestinal tract is sterile, but that within a few hours after birth the tract is well populated with bacteria? At this time of life gastric secretion is small, and the stomach offers no serious obstacle to the passage of bacteria. After lodging in the intestinal tract, where they find excellent food and temperature conditions, it would seem that they had found a permanent location. It is true that the intestinal flora at this time of life is different from the flora of later life, but a variety of types is represented, nevertheless, and as conditions in the intestinal tract change with advancing life, a different type gains prominence.

It is furthermore stated by leading authorities that gastric juice of high acid concentration is secreted under the stimulus of food; that there are daily periods when the secretion is relatively small and when the acid content is low. During these periods, saliva, teeming with bacteria, is constantly swallowed; water may be taken, and other substances containing bacteria may reach the stomach. Are not the chances in favor of bacterial passage through the stomach into the intestinal tract under such conditions considerable?

If these considerations are true, it would seem that the enormous population of bacteria in the intestinal tract is not difficult to explain.

P. G. HEINEMAN, Chicago.

IRRADIATED FOODS, RADIUM AND PHOSPHORUS

To the Editor:—In THE JOURNAL, July 25, appears a communication from Dr. Tomb, suggesting that the acquisition by foods of antirachitic potency as a result of irradiation "is merely a stored-up form of radiant energy," and raising the question of whether "radium emanation or the phosphorescence of phosphorus may not also be antirachitic in action." In this connection I should like to call attention to the fact that in my preliminary communication to the American Pediatric Society, in June, 1924, on the activation of inert vegetable oil, it was reported that animals failed to be protected from rickets by feeding small amounts of radium bromid or by additions of minimal amounts of radium to linseed oil. The details of these experiments may be found in a later publication (*J. Biol. Chem.* **62**:301, 1924).

The author further suggests that "the action of phosphorus in rickets is worthy of modern laboratory investigation" and that phosphated oil may be a "universally available substitute for both the mercury vapor lamp and sunlight in the clinical treatment of rickets." Recently we have made careful biologic tests of this kind, and found that phosphorus is of no value in the prevention of rickets. The substitution of phosphorus for either of the specific antirachitic agents—ultraviolet rays or cod liver oil—would be a decided step backward, and is fraught with danger to one of the most promising fields in preventive medicine.

ALFRED F. HESS, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PHARYNGOMYCOSIS

To the Editor:—I am asking you for information about a case of pharyngomycosis. The boy is 6 years old, well nourished and developed, and his health is good. He came to see me for white areas on both tonsils. He had received potassium iodid, also thymol internally. Locally, silver nitrate, mercurochrome-220 soluble, thymol in alcohol, thymol and cinnamon oil in alcohol, trichloracetic acid 10 per cent., and chromic acid 10 per cent. had been applied. So far there has been no change after three months' treatment. I shall appreciate very much if you will tell me a cure or what would be best to do.

GEORGE A. GRIOT, M.D., Chadron, Neb.

ANSWER.—Pharyngomycosis tonsillaris is caused by a fungus or mycelium. This organism penetrates the crypts of the tonsils and is exceedingly hard to dislodge. Even though the little white plugs are pulled out with forceps, they promptly recur. All sorts of caustics and applications such as were tried have been used in many cases but are usually without avail. So far as we are aware, there are only two ways of curing the condition. One of them is to use the electrocautery, heating the platinum point to a dull red heat, and penetrating the various crypts of the tonsils and destroying them. This method, however, is usually unsatisfactory because it cannot be carried out at one sitting, and because one can never be quite certain that all the crypts are actually destroyed. For that reason disappointment is often noted in that the infection recurs. Furthermore, in a child of the age of 6, it would be very difficult indeed to do this, since it is almost impossible to get children to sit sufficiently still for the numerous cauterizations that are needed. The second method, which is the one that usually gives a perfect result, is the complete removal of the tonsils. In some of the cases, however, the white spots may appear on the posterior wall of the pharynx or on the base of the tongue. In those cases, the cautery is suitable. For a tonsillar infection, however, a complete removal of these organs, so far as we know, is the best method for complete and permanent relief.

ROENTGEN RAYS NOT PARALLEL

To the Editor:—Do the roentgen rays become parallel at 6 feet from the target? I understand that the rays are divergent, and I thought they traveled in a straight line unless obstructed. Do they become parallel 6 feet from the target or at any other distance?

J. D. RILEY, M.D., El Paso, Texas.

ANSWER.—Roentgen rays are due to a succession of independent pulsations in the luminiferous ether, starting from the points of impact of the cathode particles on the anticathode. These are not continuous vibrations like those of ordinary light; they are isolated and extremely short. The rays cannot be concentrated by lenses or deflected by strong magnets. At the time Sir George Stokes (1897) proposed his ether-pulse theory, there was considerable disagreement among physicists as to the actual nature of roentgen rays. This controversy was stilled by the discovery that they can be both refracted and reflected by crystals. Like light, they are transverse and have the same velocity. There is no doubt now that roentgen rays are identical in behavior with light except that the wave lengths are considerably shorter. The roentgen rays behave, therefore, as ordinary light; that is, the wave trains starting from the point of source will diverge continuously and never become parallel at any distance from that point.

SCANDINAVIAN FOUNDATION

To the Editor:—I am interested in the Scandinavian Foundation through which Americans are entitled to one year's study in the Scandinavian countries. Can you inform me about this, or tell me to whom to write concerning it? I naturally am interested in obtaining information concerning opportunities for medical studies

F. I. OBERG, M.D., Belgrade, Mont.

ANSWER.—The central office of the American-Scandinavian Foundation is at 25 West Forty-Fifth Street, New York. The foundation was established in 1911 to improve the intellectual relations between the American and Scandinavian people by means of an exchange of students and lecturers, publications and a bureau of information. The secretary of the board of trustees is James Creese. There were, it appears, forty exchange fellowships annually between American and Scandinavian universities between 1919 and 1924. These fellowships are for study and research in science and humanities. Applications should reach the secretary before March 15. The fellowship jury to award stipends meets the first Saturday in April.

There are other organizations which encourage study abroad, and they are described in the *Educational Record*, published by the American Council on Education, Washington, D. C., April, 1925.

PHOSPHORUS AND MERCURY COMPOUNDS IN FIREWORKS

To the Editor:—A friend of mine writes that in the hospital with which he is connected they have had several cases since the 4th wherein children have swallowed the substances of different types of fireworks. In two of these, symptoms of phosphoric poisoning developed; in another, those of mercury. Do fireworks contain these ingredients?

J. P. CROZER GRIFFITH, M.D., Philadelphia.

ANSWER.—About two years ago the division of industrial hygiene of the New York State Department of Labor carried out an investigation of the hazards connected with fireworks containing phosphorus. It was found that phosphorus (the poisonous variety, yellow phosphorus) is used in a red composition that appears on the market under various trade

names, such as "Spit-Devils," "Son-of-a-Gun" and "Devils-on-the-Walk." When ground on the sidewalk by the shoe heel, they crack, spit and sputter. The compositions have a strong odor, suggestive of phosphorus or phosphin. C. M. Salls, Ph.D., writes (Menace of Phosphorus Fireworks, Industrial Hygiene Bulletin, New York State Department of Labor, December, 1924) that several times he has noted "the characteristic phosphorus luminescence arising from the poisonous composition held by the chubby hands of a little child." According to the same article:

Chemical analysis of the red composition shows that it contains several per cent. of yellow phosphorus. The remainder of the composition consists of four comparatively nonpoisonous constituents; namely, potassium chlorate, iron oxid, magnesium carbonate, and gum arabic.

The division has record of seven deaths of little children who have put the composition in the mouth.

It is evident, therefore, that the paper or sand coating and the magnesium carbonate in the composition which are supposed to act as a preventive and an antidote, respectively, are not effective.

In the fireworks factory the workers must handle the composition and inhale the fumes of yellow phosphorus. Three cases of phosphorus poisoning from this source have been reported.

The greatest hazard, however, that is connected with phosphorus fireworks is undoubtedly the danger of ignition and poisoning while in shipment or in storage in a mercantile establishment.

A case of phosphorus poisoning in a child from the ingestion of fireworks was reported by H. J. Dwyer and F. C. Helwig (THE JOURNAL, April 25, 1925, p. 1254); a method of treatment is also detailed in this article. A treatment for phosphorus burns (external) is described by D. C. Walton (THE JOURNAL, May 23, 1925, p. 1569).

Mercury is also used in some fireworks but to a much less extent than phosphorus. "Pharaoh's serpents" (sometimes spoken of as "snakes in the grass") are at times made with mercuric thiocyanid. The same effect (great coils from the body of the lighted mass and serpentine movements) can be obtained from other substances not containing mercury.

CODEIN HABIT

To the Editor:—I am under the impression that in one of the issues of THE JOURNAL of last year the statement was made that Dr. Henry Christian and Dr. Richard Cabot of Boston, as well as some other noted clinicians, had never seen a case of codein habit and denied its occurring. If I am correct in this will you kindly refer me to the article in question, or better still, send me the issue of THE JOURNAL wherein the statement occurs? Will you also inform me as to the consensus of opinion of accepted authorities on the danger of habit formation in the use of codein, dionin and pantopon? Of course, I refer to the use of these agents in inoperable surgical conditions, asthmatic and cardiac disturbances, etc., not in neurotic states. Kindly omit my name.

T. S. O., Connecticut.

ANSWER.—We are unable to find any statement by either Dr. Christian or Dr. Cabot that they have never seen a case of codein habit.

The question of habit formation of codein was discussed in letters to THE JOURNAL, published in the issues for May 13, 1922, page 1478, and May 27, 1922, page 1654.

So far as we know, there is not available any statement of opinion by recognized authorities as to the danger of habit formation in the use of codein, dionin and pantopon.

The following statements appear in New and Nonofficial Remedies:

"Codeine (methyl-morphine) is less narcotic, less constipating, and less apt to induce tolerance and habit" (than morphin).

"Ethyl-morphine [dionin] seems to stand intermediate between morphine and codeine, in all respects."

"Pantopon-Roche (pantopium hydrochloricum) produces essentially the effects of opium, but, being devoid of its extractive, it may be used for hypodermic administration."

EFFECTS OF MERCUROCHROME-220 SOLUBLE ON ROENTGENOGRAMS AND ROENTGEN RAY

To the Editor:—Does mercurochrome-220 soluble on the skin bar the use of the roentgen ray? For instance, in a case in which a breast had been amputated for cancer and mercurochrome had been used and the stain is yet present, would one be safe in using the roentgen ray?

U. L. HUET, M.D., Seymour, Iowa.

ANSWER.—Information thus far available does not indicate whether or not painting of the skin with mercurochrome prevents or facilitates the penetration of the roentgen ray. Some evidence indicates that the use of mercurochrome in connection with ultraviolet rays does not appreciably modify the results of the latter.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 1. Sec., Dr. Harry C. De Vighne, Juneau.

NATIONAL BOARD OF MEDICAL EXAMINERS: Written examinations in Class A Medical Schools. Parts I and II, Sept. 16-18. All applications must be made on or before August 15. Sec., Dr. John S. Rodman, 1600 Walnut St., Philadelphia.

NEW HAMPSHIRE: Concord, Sept. 10-11. Sec., Dr. Charles Duncan, Concord.

OKLAHOMA: Oklahoma City, Sept. 8-9. Sec., Dr. James M. Byrum, Shawnee.

PHILIPPINE ISLANDS: Manila, Aug. 11. Sec., Dr. Jose V. Gloria, 686 Rizal Ave., Manila.

PORTO RICO: San Juan, Sept. 1. Sec., Dr. Diego A. Biascoechea, 3 Allen St., San Juan.

Wyoming June Examination

Dr. G. M. Anderson, secretary, Wyoming Board of Medical Examiners, reports the written examination held at Cheyenne, June 8-10, 1925. The examination covered 11 subjects and included 110 questions. An average of 75 per cent. was required to pass. Of the 2 candidates examined, one passed and one, an osteopath, failed. Three candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Jefferson Medical College of Philadelphia		(1923)	85.8

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Jefferson Medical College of Philadelphia	(1918),	(1924)	Utah
University of Pennsylvania		(1923)	Utah

Illinois April Examination

Mr. V. C. Michels, superintendent of registration, Illinois Department of Registration and Education, reports the written and practical examination held at Chicago, April 14-16, 1925. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 114 candidates examined, 82 passed, including 2 osteopaths and 5 drugless practitioners, and 32 failed, including 2 osteopaths and 6 drugless practitioners. Seventeen candidates, including 2 osteopaths, were licensed by reciprocity, and 3 candidates were licensed by endorsement of their credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
George Washington University		(1921)	77
Chicago Medical School		(1922)	78
Loyola University	(1924, 2) 77, ‡	(1925)†	84
Northwestern University	(1924) 77,	(1924)†	‡
Rush Medical College	(1925, 32) 78, 80, 81, 81, 82, 82 83, 83, 83, 83, 84, 84, 84, 85, 85, 85, 85, 85, 86, 86, 86, 87, 87, 87, 87, 87, 87, 88, 89, 89, ‡ (1924) 84, (1924, 14)†, ‡		
University of Illinois	(1924, 3)†, ‡,	(1925)†	80
Indiana University		(1924)	‡
Tulane University		(1923)	85
University of Minnesota Medical School		(1924)	85
St. Louis University		(1923)	75
Washington University		(1925)	‡
University of Buffalo		(1919)	85
University of Oklahoma		(1923)	87
University of Oregon	(1924, 2)		‡
University of Manitoba, Winnipeg		(1925)†	80
German University of Prague, Czechoslovakia		(1921)*	82
University of Berlin, Germany	(1911)* 79,	(1921)*	77
University of Erlangen, Germany		(1924)*	76
Univ. of Budapest, Hungary	(1892)* 83,	(1919)* 78, (1922)*	79

College	FAILED	Year Grad.	Per Cent.
Georgetown University		(1896)	66
Bennett Medical College		(1914)	74
Chicago Medical School	(1922, 2) 61, 71, (1923, 3) 71 72,		‡
Jenner Medical College		(1917)	71
Loyola University		(1924)†	‡
Eclectic Medical University, Kansas City		(1917)	70
University Medical College of Kansas City		(1911)	70
Meharry Medical College	(1903) 28, (1914) 43,	(1923)	69
Univ. of Naples, Italy	(1916)* 40, (1920, 2)* 58, 60,	(1921)*	44

University of Cluj, Roumania	(1922)*	69
University of Kharkov, Russia	(1914)* 72, (1915)*	60
University of Odessa, Russia	(1918)*	59
University of St. Vladimira, Russia	(1923)*	74
University of Saratov, Russia	(1916)*	62

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago Homeopathic Medical College		(1903)	Iowa
The General Medical College		(1924)	Wisconsin
Illinois Medical College, Chicago		(1902)	Mississippi
Rush Medical College		(1924)	Wisconsin
Tulane University		(1912)	Alabama
Johns Hopkins University		(1921)	Maryland
Maryland Medical College		(1912)	Penna.
University of Minnesota Medical School		(1905), (1913)	Minnesota
National Univ. of Arts and Sciences Medical Dept.		(1912)	Arkansas
Temple University		(1918)	Penna.
University of Tennessee		(1912) Tennessee, (1915)	Texas
Marquette University		(1915)	Wisconsin
University of Toronto		(1892)	Indiana

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Rush Medical College		(1902)	U. S. Army
Georgetown University		(1914)	U. S. Navy
National Univ. of Arts and Sciences Medical Dept.		(1917)	War Record Exemption

* Graduation not verified by the American Medical Association.

† This candidate has completed his medical course and will receive his M.D. degree on completion of a year's internship in a hospital.

‡ No grade given.

Book Notices

TUMORS OF THE SPINAL CORD. The Symptoms of Irritation and Compression of the Spinal Cord and Nerve Roots. Pathology, Symptomatology, Diagnosis and Treatment. By Charles A. Elsberg, M.D., Professor of Neurological Surgery, Columbia University. Cloth. Price, $10. Pp. 421, with 354 illustrations. New York: Paul B. Hoeber, Inc., 1925.

This is a classic contribution to the literature. It deals with the symptoms of irritation and compression of the spinal cord and nerve roots caused by tumors of the spinal cord, and with the pathology, symptomatology, diagnosis and treatment of spinal cord tumors. The work is based on the results of investigations carried out by the author during the last twelve years on 100 verified tumors of the spinal cord on which he personally studied and operated; eighty-one of these cases are given in detail. Special stress is laid on the general medical and neurologic aspects of spinal cord tumors. Often great diagnostic skill is required to differentiate between pain in the chest due to intrathoracic disease and that due to spinal root irritation, to distinguish between symptoms of intra-abdominal disease and root symptoms due to spinal disease, to understand the significance of brachial, intercostal or sciatic neuralgia. This also applied to the differentiation of the symptoms of primary disease of the bladder or prostate gland from the rectal and vesical disturbances accompanying spinal disease. Elsberg points out the great importance of recognizing and differentiating between the progressive symptoms of a neoplasm of the spinal cord and of arthritis of the bony spine, on the one hand, and of primary or secondary malignant disease of the vertebrae, on the other. For the former the surgical results are brilliant, while in malignant diseases surgery is often useless. Contrary to the usual belief, Elsberg feels that at present there is no clear evidence that trauma or infection can cause or stimulate the growth of a cord tumor or that there is a congenital or hereditary factor in its development. Pregnancy and labor have been mentioned by many authors as having preceded the rapid appearance of spinal symptoms In three of his cases, the symptoms either began or became markedly aggravated after confinement. It is probable that there is no predilection for either sex. In his series, there were fifty-seven female and forty-three male patients. The tumors may occur at any age, but are especially likely to occur in adult life. His statistics agree with those generally found in the literature that spinal tumors are infrequent before the twentieth and after the sixtieth year. Eighty-four per cent. of his patients were between 20 and 60.

Four chapters, giving case reports in detail, are magnificently presented. The first three deal with extramedullary tumors, the fourth to cases of intramedullary tumors. Each case report is accompanied by outline drawings of the body on which are indicated the cutaneous distribution of the various spinal nerve segments, shaded to illustrate graphically the sensory disturbances for touch, pain and temperature and the degree of change. Each case report is accompanied by a wash drawing and sketch showing the condition found at operation, a photograph of the tumor removed, and a photomicrograph of a section of the neoplasm. After a chapter on the relation of the tumors to the cord and one on the cerebrospinal fluid, there are three chapters devoted to symptomatology, and then a chapter on the clinical features at different levels of the cord. The remaining chapters deal with pathologic anatomy, multiple tumors, diagnosis and differential diagnosis, treatment and results.

Contrary to the beliefs of the last thirty years, and in direct opposition to experimental and clinical observations made by a number of investigators, Elsberg believes that there is a lamellar arrangement of the fibers in the pyramidal and spinothalamic tracts similar to the arrangement of the long fibers in the posterior column of the cord. He calls attention to the fact that a positive Wassermann reaction should never cause a long delay before surgical intervention is instituted, unless there is a great improvement in the symptoms. If the improvement is not rapid, surgical measures are called for without delay. He emphasizes the importance of paresthesias on the opposite side below the level of the lesion as a symptom of extramedullary tumors on the ventral and lateral aspect of the cord. The more carefully the history of such a patient is taken, the more often will a description of contralateral paresthesias be obtained. Not only is this the case in intradural growths, but it is frequent also in those lying outside the dura. A favorite site for extradural growths is the anterolateral aspect of the dural sac, and the occurrence of contralateral tingling or other paresthesias must make one always think of the possibility of an extradural growth. An unpleasant experience with a subpial tumor taught him that it is never safe or advisable to remove all of a growth if it is too firmly attached to cord tissue. It is well to remember that a patient with a cord tumor may have arthritic changes in the vertebrae which have nothing at all to do with the spinal symptoms. Elsberg has seen only one instance in which definite spinal cord signs were the result of arthritic changes.

Attention is called to the fact that a feeling of coldness in the extremities seems to be a regular complaint in high cervical tumors, and was recorded in every one of his histories of high cord tumors. At one time the author believed that cervical cord tumors should not be removed at one stage, but that, after exposure of the growth, their actual removal should be deferred until pressure conditions within the spinal canal had somewhat readjusted themselves. He now states that this view, if exceptional cases are excluded, was erroneous, and he is firmly convinced that, whenever possible, an operation for an extramedullary spinal tumor should be completed at one sitting. Subjective and objective respiratory disturbances occur in most of the patients with tumors of the uppermost cervical segments. It is surprising that respiratory disturbances are not more often observed in tumors of the level of the fourth cervical segment. Disturbances in the bladder function are a late symptom in the majority of cord tumors, even when they are located in the lumbosacral cord and between the roots of the cauda equina. The author records a few cases in detail in which he suspected that the growth was on the posterior surface of the cord on account of the marked posterior column disturbances, but in which the tumor lay in front of the cord and pushed the cord markedly backward, so as to force the posterior white columns against the dura and the posterior wall of the vertebral canal. The text ends with a tabulation of operative experiences which is very full, covering for each case the age, duration of symptoms, condition of the cord, arches removed, treatment of the tumor, result and duration. This is followed by a bibliography of 288 references, mainly those publications to which reference has been made in the text. To this are added sixteen additional references, including papers read at the 1923 meeting of the French Association of Neurology, at which the main topic was "Spinal Compression." There is an index of authors and an excellent subject index.

HELMHOLTZ'S TREATISE ON PHYSIOLOGICAL OPTICS. Translated from the Third German edition. Edited by James P. C. Southall, Professor of Physics in Columbia University. In three volumes. Volume I. Cloth. Price, $7 per volume. Pp. 482, with 150 illustrations. Ithaca: The Optical Society of America, 1924.

Aug. 31, 1821, there was born to a teacher of classical languages in the Potsdam gymnasium, and his wife, a son who was named Hermann Ludwig Ferdinand von Helmholtz. One hundred years later, at a meeting of the Optical Society of America, it was decided to translate the masterpiece of Helmholtz into the English language as a centennial memorial and to render available to a larger number of scientists the greatest thesaurus of physiologic optics ever written. A distinguished member of that highly scientific society was put in charge of the undertaking, and under his leadership and editorship twelve American scientists began the translation of Helmholtz' monumental work. The various volumes of the first German edition appeared in 1856, 1860 and 1866, and the third edition, revised and edited by Gullstrand, Nagel and von Kries, was completed in 1911. The latter edition was chosen for the English translation, and the text was adhered to verbatim. The appendixes, by von Kries and others, were included, and to the first volume was added a chapter on ophthalmoscopy by Gullstrand, with the mathematical and practical principles of modern ophthalmoscopy. The first volume of the translation pertains to the physical phase of the subject; the second will be devoted to the physiologic phase, and the third to the psychologic. No expense has been spared in the preparation of these volumes, and they redound greatly to the printers' credit. All honor is due the editor, Professor Southall, whose untiring energy, thorough understanding of the subject, and keenly analytic mind has made possible the inclusion in all scientific libraries of this work on physiologic optics in the English language.

PYE'S SURGICAL HANDICRAFT. A Manual of Surgical Manipulations, Minor Surgery and Other Matters Connected with the Work of House Surgeons and Surgical Dressers. Edited and Largely Rewritten by W. H. Clayton-Greene, C.B.E., B.A., M.B., Surgeon to St. Mary's Hospital. Ninth edition. Cloth. Price, $7. Pp. 619, with 358 illustrations. New York: William Wood & Company, 1924.

This edition has been revised and rewritten to a great extent by Clayton-Greene. The author believes that the surgeon should be a highly skilled handicraftsman, and makes an effort to instruct him concerning certain surgical procedures. It has been his endeavor to consider the surgical conditions throughout their treatment encountered by resident hospital surgeons and interns. The contents include mechanical and chemical methods of arresting hemorrhage, and of taking care of complications following it. The technic of blood transfusion is described fully, from the testing of blood for compatibility and blood grouping. The application of various bandages, splints and plaster casts in the care of emergencies is shown, with illustrations. The treatment of practically all ordinary fractures and dislocations is given from emergency care to follow up observation. Accepted methods are advocated, and there are numerous illustrations to show splints or methods of treatment recommended. This section takes up about one sixth of the volume. Tuberculous bones and joints requiring prolonged mechanical treatment are taken up later, but might better be taken up in the section on the use of splints in fractures. The treatment of abscesses and of wounds due to injury, burns or chronic disease is considered in detail. The control of sepsis by various accepted methods is described. Bier's passive hyperemia treatment, cupping, blisters and numerous other methods are included, though they are rarely used in this country. A study of venereal disease, written by a collaborator, is inserted here without any apparent reason. The discussion of the Wassermann reaction takes up a fourth of the subject matter of this section, and is entirely out of place in a volume of this kind. Drug medication takes up the rest of the chapter. Under minor surgery are grouped such procedures as the evacuation of joints, aspiration of the chest and the bladder, and the use of the bladder catheter and the stomach tube. Retention of urine is considered satisfactorily, including the causes, various forms of treatment, and postoperative care. There is a brief consideration of the use of the cystoscope and the proctoscope. Chapters on certain emergencies, such as strangulated hernia, intestinal obstruction, acute abdominal lesions, poisoning, head injuries and suffocation, are fairly well written, but their location in the book, grouped as a distinct and separate section, is confusing, since much of the other subject matter, such as fractures and injuries, are also emergencies. The specialties, including eye, nose and throat, larynx, ear and teeth, are written by specialists. The majority of the chapters on the eye might well have been left to a special work on the subject, which criticism applies in a less degree to the consideration of the other specialties in this group. The chapter on the choice and administration of anesthetics, by Blomfield, when considered from the American point of view is obsolete. There is only one page devoted to local anesthesia. This certainly merits greater consideration and might well be elaborated. There are acceptable chapters on preoperative and postoperative care. There is a brief chapter on urine examination and on the roentgen ray. The chapters written by collaborators are not uniform in following up the purpose of the book, and have been rather poorly assembled. The author has done well in rewriting this work, which contains an immense amount of important detail, of value to the intern and to the private practitioner doing surgery.

VORLESUNGEN UEBER HISTO-BIOLOGIE DER MENSCHLICHEN HAUT UND IHRER ERKRANKUNGEN. Von Dr. Josef Kyrle, A. O. Professor für Dermatologie und Syphilis an der Universität in Wien. Erster Band. Paper. Price, 45 gold marks. Pp. 345, with 222 illustrations. Berlin: Julius Springer, 1925.

This is the outgrowth of a series of lectures covering the histobiology of the skin, which the author takes up under two heads—one a general biologic one and the other a demonstration of histologic specimens. Thus, he would supplement the earlier works of Unna, Macleod and others by laying special emphasis on the biologic processes underlying the structural changes in the skin and only briefly considering pure morphologic changes. The first volume includes chapters on normal skin, pigment, atrophies, hypertrophies and parasitic skin diseases. A possible exception might be taken to the author's including among the hypertrophies such subjects as nevi, lymphangioma, fibroma, keloid and neuroma, which are usually classified with benign new growths. The work is profusely illustrated with exceptionally clear histologic drawings, and will prove of great value to all interested in the scientific study of cutaneous diseases.

DYSPEPSIA, ITS VARIETIES AND TREATMENT. By W. Soltau Fenwick, M.D., B.S. Second edition. Cloth. Price, $6 net. Pp. 515, with 14 illustrations. Philadelphia: W. B. Saunders Company, 1925.

This is a masterly treatise on the clinical features of indigestion, excelling especially by a careful study and readable presentation of those points in the symptomatology that are of value in the differential diagnosis. The author's therapy is sensible and efficient as long as he relies on his own experience. Unfortunately, at times he throws in—for good measure, evidently—insufficiently tested recommendations by others that can only confuse the student.

FUNDAMENTALS OF CHEMISTRY. A Text-Book for Nurses and Other Students of Applied Chemistry. By L. Jean Bogert, Ph.D., Research Chemist, Obstetrical Department, Henry Ford Hospital, Detroit. Cloth. Price, $2.75. Pp. 324, with 18 illustrations. Philadelphia: W. B. Saunders Company, 1924.

This book, written for nurses, is another addition to the already great number of texts on chemistry for beginners. It appears, however, to justify its existence in a general way by emphasizing such facts in chemistry as will be of practical value to nurses. Attention is given to the fundamentals of nutrition, the digestive fluids, blood, lymph, milk, urine and feces. The appendix contains tables of English and metric equivalents, Centigrade and Fahrenheit equivalents, antidotes to poisons and directions for the removal of stains. In covering such a wide range of subject matter as the title includes, the details must necessarily be brief, and only the most elementary facts are given without reference to the literature. Nevertheless, the information is given in an attractive manner, so that the text will be of interest to the general reader. A few imperfections were noted. For example, acacia and gum arabic are mentioned as separate

substances, although the names are synonymous in the U. S. Pharmacopeia. Chemical formulas are given as absolute for some compounds, such as bismuth subnitrate and basic lead carbonate, only the approximate composition of which is known, without explanation of their uncertain constitution. The author's list of alkaloids might well have included apomorphin, caffein, homatropin and quinidin, as these find application in medicine. The tables on antidotes and also removal of stains are copied from other textbooks; the information given, however, is not satisfactory or free from imperfections. Notwithstanding these criticisms, the book is superior to most chemistry textbooks for nurses.

EINFÜHRUNG IN DAS STUDIUM DER NERVENKRANKHEITEN FÜR STUDIERENDE UND AERZTE. Von Dr. Alfred Fuchs, A. Ö. Professor für Psychiatrie und Nervenkrankheiten an der Universität Wien. Second edition. Paper. Price, 19 gold marks. Pp. 491, with 128 illustrations. Leipsic: Franz Deuticke, 1925.

This book, dedicated to Wagner von Jauregg, the author's teacher and former chief, has been written for the purpose of "introducing students to the difficult field of clinical neurology and to enable the practitioner of medicine to obtain a rapid or preliminary orientation regarding a neurologic subject." The author may be said to have attained this quite well, but the book cannot be said to be entirely down to date, especially as regards inclusion of recent contributions to neurology from beyond the frontiers of the German-speaking countries.

ALLEN'S COMMERCIAL ORGANIC ANALYSIS. A Treatise on the Properties, Modes of Analysis, and Proximate Analytical Examination of the Various Organic Chemicals and Products Employed in the Arts, Manufactures, Medicine, Etc. With Concise Methods for the Detection and Estimation of Their Impurities, Adulterations, and Products of Decomposition. Volume III. Hydrocarbons, Bitumens, Naphthalene and Its Derivatives, Anthracene and Its Associates, Phenols, Aromatic Acids, Gallic Acid and Its Allies, Phthalic Acid and the Phthaleins, Modern Explosives. By the editors and the following contributors: H. E. Cox, Samuel P. Sadtler, W. A. Davis, John H. Sachs, J. Bennett Hill, Edward Horton, W. P. Dreaper, W. A. Davis, A. Marshall. Fifth edition, revised and in part rewritten. Edited by Samuel S. Sadtler, S.B., Elbert C. Lathrop, A.B., Ph.D., and C. Ainsworth Mitchell, M.A., F.I.C. Cloth. Price, $7.50. Pp. 732, with 36 illustrations. Philadelphia: P. Blakiston's Son & Co., 1925.

This volume is divided into nine chapters, each by a separate author except two, which have been prepared by the same writer. The chapters are entitled Hydrocarbons; Bitumens; Naphthalene and Its Derivatives; Anthracene and Its Associates; Phenols; Aromatic Acids; Gallic Acid and Its Allies; Phthalic Acid and the Phthaleins, and Modern Explosives.

The chapters on phenols and aromatic acids, which include benzaldehyd, salicylic acid and related compounds and benzoic acid and its esters, are of value to those interested in medicinal chemistry. In these sections much attention is given to the detection and determination of saccharin, vanillin and coumarin in foods and beverages. The Rideal-Walker and the Hygienic Laboratory methods for determining the phenol coefficient of antiseptics are given in full, and the difficulties in carrying out each are discussed. While much new material has been added in the revision, numerous subjects properly belonging in the classification are but briefly treated or are not mentioned at all. In the article on phthalic acids, modern work on the subject of indicators is discussed and the uses of these substances for volumetric titrations and for hydrogen ion determinations are detailed. In general, the most approved methods of analysis are given throughout the volume, and numerous references to the literature are cited. The book is a worthy addition to the preceding volumes in the series.

LES ARYTHMIES EN CLINIQUE. Par Antonin Clerc, Professeur agrégé à la Faculté de médecine. Préface du Pr. H. Vaquez. Paper. Price, 34 francs. Pp. 403, with 205 illustrations. Paris: Masson et Cie, 1925.

This is a clear, orderly and well proportioned presentation of the irregularities of the heart. As the title implies, the book is devoted largely to the clinical features of the arrhythmias, but there is presented enough of the anatomy and physiology underlying the different conditions to make plain to the reader the meaning of the altered rhythm when met at the bedside. Well chosen figures, largely of electrocardiograms, illustrate the various types of rhythms. There is no insistence on the electrocardiograph as an indispensable adjunct to the examining physician. He is taught that he can in most instances detect these conditions without the special instrument of precision; but he can obtain great aid in the understanding and interpretation of the irregularity by a study of these tracings. The work may be commended to student or practitioner as a reliable compend on this subject.

APPROACHING MOTHERHOOD. Questions and Answers of Maternity. By George L. Brodhead, M.D., Visiting Obstetrician, Bellevue and Allied Hospitals, Harlem Division, New York City. Cloth. Price, $1.50. Pp. 193. New York: Paul B. Hoeber, Inc., 1925.

In this neat and handy little book is concisely presented all the mother can conveniently take in and assimilate of our modern obstetric doctrine. The question and answer form of expression may be objectionable from certain standpoints; on the other hand, this method serves to arouse and hold a flippant or inconsecutive intelligence.

Miscellany

PROVISIONS FOR TUBERCULOUS PATIENTS WITH MENTAL DISEASE

The National Tuberculosis Association and the Committee for Mental Hygiene have made a study of the institutional requirements for patients who have both tuberculosis and mental or nervous disease. The report was prepared by Dr. Samuel W. Hamilton and Mr. T. B. Kidner, and has been published in pamphlet form. Inquiries showed that the number of patients in psychopathic hospitals who have tuberculosis varied from 2 per cent. to more than 8 per cent. Although the general type of patients seemed similar in each institution, they concluded that the number of tuberculous patients discovered depends on whether there is on the medical staff a tuberculosis specialist. In the hospital reporting only 2 per cent. of its patients as tuberculous, there was no staff member who had any special experience with tuberculosis, while at the hospital reporting 8 per cent. tuberculous one of the staff had specialized in tuberculosis. After consulting specialists, it was agreed to assume that not less than 5 per cent. of the total number of beds in psychopathic hospitals should be arranged for tuberculous patients.

Among the tuberculous patients in psychopathic hospitals, the percentage of bed patients was estimated at 50 and the semiambulant cases at 30. Of the total number of tuberculous patients, 10 per cent. will be at times "disturbed" cases; 15 per cent. will be constant observation cases, and 75 per cent. quiet cases. The problem of planning accommodation is to segregate into three groups from the point of view of the mental state and at the same time have facilities for rest, fresh air and nourishing food for those who are tuberculous. One story buildings of the pavilion type will generally be more suitable for tuberculous patients in psychopathic hospitals except when there is a large number of patients and the building area is limited. Separate units should be provided for each sex except, perhaps, in small institutions. The buildings should face South-Southeast in the northern parts of this continent, and no patient's room should be on the rear side of the buildings. In the subtropics it is better to face the buildings East-Southeast, consideration being given to protection, if possible, from winds by the natural topography, which should allow also for level walking areas for exercise. Rooms for disturbed cases should be at one end of the buildings, with windows facing away from the other patients, and be provided with sound-deadening partitions and ceilings. Each patient should have a single room with sleeping porch, and if possible a day or sitting room should be used in common. There should be for disturbed cases a separate water section for bathing and toilet purposes, unless the number of patients is small. The constant observation cases are most conveniently quartered in a ward of the open type, having the sleeping quarters separated from the day room by a dwarf wall or partition about 4 feet 6

inches high so the nurse may view the patients. Quarters for the quiet cases in which there is tuberculosis may follow the usual arrangement in tuberculosis sanatoriums. There should be a combined office and examination room for the physician in charge, and in units as large as sixty beds and upward separate rooms for minor surgical procedures, a dental chair, office or duty room for the head nurse, and facilities for heliotherapy, including "sun treatment" and artificial heliotherapy. The "sun treatment" decks should be located so that patients cannot be observed from other buildings or high grounds, and one side should be sheltered so that a cot may be wheeled into the shade and the period of exposure to the sun graduated. When the number of patients is large, there should be a special room for artificial heliotherapy. In small groups a portable lamp may be carried from one room to another, as required. There should be a special room for occupational therapy. The dining room should seat at least 75 per cent. of the patients.

All plumbing and toilet fixtures should be of the simplest pattern, the likelihood of patients injurying themselves being always borne in mind. Mental patients in groups are usually bathed at certain hours, being assembled in a room adjoining the bathroom, into which they are directed one by one, and passing after the bath into a room at the opposite end to dress in clean underclothing. The continuous bath is scarcely ever employed for tuberculous patients. The shower bath occupies, in the plan attached to this report, an area of 6 by 3½ feet, with the control valve outside the bathing space; the curb sometimes installed to divide the shower space from the rest of the floor is omitted. The shower space is sunk, however, three-fourths inch below the level of the bathroom floor, and the edge is rounded. Waste water plugs should be omitted from the bowls, so that tuberculous patients will wash in running water, and the bowls equipped with a single inlet for hot and cold water. The utility room should be large, for the work is done by patients. There should be a room with open shelving for clean bedding, and a separate room for soiled linen. The floors and walls should be finished in smooth cement, with a drain in the floor for frequent cleaning purposes. Sleeping porches should have a cement or concrete floor, in which is incorporated in the surface coat some anti-dusting composition. The threshold strips should be omitted between rooms so that cots may be wheeled easily. The problems of windows for porches for these patients is difficult. The ordinary double hung sash is probably the most convenient as yet. The upper portion should be provided with a sash over a transom bar to allow ventilation without a direct draft. Among miscellaneous details in construction mentioned are heavy cylinder locks for all intercommunicating doors in buildings in which mental patients are housed, and the omission of all architectural details likely to collect dust. Walls should be plastered in smooth finish and painted in soft tones rather than dead white; for patients' rooms, neutral buff, and for corridors neutral gray is suggested, with the sitting rooms in some third color. Several diagrams of building plans for units for the tuberculous insane patients are attached to the report.

BIRTH CONTROL

On July 7, 1924, the Illinois Birth Control League opened a center in a west side Chicago community. In the first ten months of its existence the clinic gave advice to 500 persons, including practically all the nationalities and religions in the city. Two hundred and fifty-two were American women, fifty-eight Polish, forty-two Jewish, thirty-five German, twenty-six colored, fifteen Bohemian, fourteen Italian, eleven Swedish, and so on in diminishing number through other nationalities. Religiously, the 500 women included 304 Protestants, 147 Roman Catholics, three Greek Catholics and forty-six Jewish persons. The ages of those who consulted the clinic, varied from 16 to 40, the girls under 20 being mothers in some instances with two or three children. Four hundred and sixty-four of the 500 patients were housewives, and the other thirty-six were women employed in industry. The reasons given by the persons requesting information regarding birth control, divided by classes, were: the desire on the part of those just married to postpone childbirth until capable of establishing a home; health of either husband or wife making children undesirable, and, last, other economic causes. Obviously, the most difficult is the third group, in which the investigators attempted to determine whether the economic conditions warranted the giving of birth control information. In this connection, a case is cited of a woman, aged 30, who had married at 19 and who had seven children, her husband being a guard on the elevated railway and the family being registered with eleven charitable organizations. In another case, a woman of 40 had been married at 20 and in twenty years had had sixteen pregnancies, resulting in fourteen children, of whom seven died in infancy. The husband is a street cleaner, aged 54. This family also was registered with the charitable organizations.

Medicolegal

Death from Touching Gangrenous Body Not Compensable

(Connelly v. Hunt Furniture Co. et al. (N. Y.), 207 N. Y. Supp. 695)

The Supreme Court of New York, Appellate Division, Third Department, reverses an award of the state industrial board in favor of the claimant for the death of her son, an employee of the furniture company, and dismisses her claim. It is said in one of the two opinions filed in the case that the employee came to his death from septicemia. His death was not compensable, unless the disease naturally and unavoidably followed an accidental injury (Section 2, Subd. 7, workmen's compensation law). There was here no accidental injury preceding or causing the disease. It was not an accident that the employee touched a gangrenous body that he was preparing for burial. The contact made was intended to be made, and did not involve an occurrence or happening, sudden or unexpected. Moreover, the contact was not in itself an injury. There was no traumatism and no immediate physical hurt. Disease resulted from the transference of bacteria from the dead body to the employee, and their entry into the blood current through a break in the skin not occasioned by the employment. The disease did not immediately occur, and was not the sudden infliction of an injury. It arose from the gradual multiplication of the bacteria received and the subsequent exudation of deadly toxins through an extended period of time. Even if it could properly be said that the onset of the disease was in itself an accidental injury, nevertheless it was not preceded by such an injury, so that under the plain reading of the compensation act no recovery was possible. In the other opinion it is said that the question was whether the employee received an accidental injury—whether the receiving into his system disease-producing bacilli, not preceded or attended by a separate accidental injury suffered in the course of his employment, was an accidental injury. A disease contracted is an accidental injury in two conditions under the statute: (1) When it is such a disease or infection as naturally and unavoidably results from an injury; (2) occupational diseases, in which cases the disablement is to be treated as an accident. The instant case did not disclose an occupational disease. The conclusion is that there was no accidental injury within the meaning of the statute.

Rules of State Board of Health—Should Be Pleaded

(Shilkett v. State (Okla.), 232 Pac. R. 127)

The Criminal Court of Appeals of Oklahoma reverses a judgment that imposed a fine of $100 on defendant Shilkett for obstructing a health officer. The information charged that he unlawfuly obstructed the officer by removing a coyote or allowing it to be removed from his premises, and failing and refusing to furnish the coyote to the health officer for the purpose of having the coyote, or its head, tested for rabies, "said coyote having bitten one Joe Mason, contrary to Section 6813, Laws of 1910, contrary to the form of the statutes in such cases made and provided and against the peace and dignity of the state." The court says that statement in the

information here enclosed in quotation marks made a fairly good accusation against the coyote, but the information stated no offense against the person in charge of the animal.

The authority of the local health officer, known as the county superintendent of public health, is found in Section 8672 of the Compiled Statutes of 1921, which empowers him "to abolish nuisances that are dangerous to public health, to isolate persons affected with dangerous and contagious diseases, and to do such other things, with the approval of the state board of health, as may be deemed necessary for the preservation of the public health within said county." The statute does not in express terms make provision for the suppression or treatment of rabies, and there was no sufficient allegation that the keeping of the coyote constituted a nuisance.

Within reasonable bounds, the legislature may confer regulative powers on the state board of health, and give to that board authority to adopt rules and regulations having the force and effect of law. The statute, by inference at least, gives the state board of health power to make and enforce reasonable regulations; but there was no allegation in the information that the board of health had promulgated any rules relative to animals afflicted with rabies, by authority of which the county superintendent of public health assumed to act; and the courts cannot assume that such rules were promulgated.

It follows, therefore, that, to sustain a prosecution of this character, the written accusation should aver that the state board of health made, promulgated and published some rule or regulation concerning rabies, and that the accused resisted or interfered with the operation of such rule sought to be enforced by an authorized agent charged with that duty. In other words, where the public health statutes make no specific provision for the suppression or control of rabies and there are no averments in the information that the state board of health promulgated any rules on that subject, the courts will not assume that such rules were promulgated. The authority of a local health officer to act in the premises should be pleaded.

Medical Practice Act and Injunction—Chiropractors

(Johnson v. State (Texas), 267 S. W. R. 1057)

The Court of Civil Appeals of Texas says that at the conclusion of the evidence in this case, which was tried before a jury, the court directed a verdict in favor of the state and entered a judgment which enjoined defendant Johnson from in any way practicing medicine in violation of the provisions of Title 90, Ch. 1, of the Revised Statutes of Texas, or in violation of the provisions of Title 12, Ch. 6, of the Penal Code of the state; and also enjoined him from thereafter in any way treating or offering to treat any disease or disorder, mental or physical, or any physical deformity or injury, by any system or method, or to effect cures therefor, for money or other compensation within the state of Texas. It was in evidence that he had been duly tried and convicted on an information which charged him with practicing medicine in violation of law, and that he was pursuing his profession of chiropractor at the time of the trial of this case without having complied with the medical practice act. Evidence that he was an inhabitant of the city of Greenville and had established a residence there for the purpose of pursuing his profession fixed such a residence in Hunt County as gave the district court of that county venue of this suit.

The provision of the statute that a suit for injunction shall not be entertained in advance of a previous final conviction of a violation of the medical practice act is not a limitation on the state in the matter of evidence and does preclude the admission in the suit for injunction of evidence of the defendant's treatment of patients for pay previous to such conviction.

It was urged that Title 90, Ch. 1, of the Revised Statutes, and Title 12, Ch. 6, of the Penal Code, as amended by Chapter 138 of the Acts of the Thirty-Eighth Legislature are unconstitutional and void. The logic of the defendant's contention was that, as the various schools established by the different systems of the practice of medicine to qualify one for the treatment of disease and human deformity are based on radically different theories, both as to the cause of said ills and as to their treatment, manifestly there can be prescribed by the legislature no general or common educational test to determine the fitness of one to practice his own system of the healing art. Instead of the one common test as prescribed by the medical practice act, the legislature must provide for an education and examination appropriate to the particular school, in order that such legislation shall not fall within the constitutional inhibition against discrimination. The court does not agree with that contention.

The conditions prescribed as necessary prerequisites in the matter of education and training for entry into the medical profession by Articles 5739 and 5741 of the Revised Statutes, which are a part of the medical practice act, represent that which the legislature in its wisdom deemed necessary in the interest of the public health and the public welfare as the state's guaranty of fitness for this high calling. These conditions apply to all persons alike; they do not prescribe any method to be employed in healing disease, or any system of practice to be adopted by the practitioner. If he possesses the qualifications prescribed by the statutes and is awarded a certificate to practice medicine, he is just as free to adopt the system of the chiropractor as he is to adopt the system of the regular physician. The fact that it requires a broader education than is given by the chiropractic college to meet these conditions cannot be urged as a discrimination against such schools of medicine. It is easily within the power of a chiropractor to conform to the prescribed conditions. This record showed that all the subjects prescribed by this act for examination are taught by the chiropractic schools, except those of surgery and medical jurisprudence; so it may be said that these schools give substantial recognition to the essential qualifications prescribed by these statutes.

Nor does the court think that Article 5744b of the Revised Statutes, under which the injunction proceedings in this case were instituted, invades any constitutional guaranty of the citizen. The fact that a person enjoined from the practice of medicine might be prosecuted for the doing of the very acts for which he was held and punished for contempt invades no guaranty of the citizen's rights.

There was no error in instructing a verdict in this case. Rehearing denied.

Society Proceedings

COMING MEETINGS

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Hot Springs, Va., Sept. 16-18. Dr. James E. Davis, 111 Josephine Avenue, Detroit, Secretary.

American Electrotherapeutic Association, Chicago, Sept. 15-17. Dr. Richard Kovacs, 223 East 68th Street, New York, Secretary.

American Roentgen Ray Society, Washington, D. C., Sept. 22-25. Dr. Charles L. Martin, Baylor Hospital, Dallas, Texas, Secretary.

Colorado State Medical Society, Colorado Springs, Sept. 29-Oct. 1. Dr. F. B. Stephenson, Metropolitan Building, Denver, Secretary.

Idaho State Medical Association, Pocatello, Sept. 10-12. Dr. J. N. Davis, Kimberly, Secretary.

Indiana State Medical Association, Marion, Sept. 23-25. Mr. T. A. Hendricks, Hume Mansur Building, Indianapolis, Executive Secretary.

Michigan State Medical Society, Muskegon, Sept. 8-10. Dr. F. C. Warnshuis, Powers Theatre Building, Grand Rapids, Secretary.

Mississippi Valley Conference on Tuberculosis, Lansing, Mich., Sept. 15-17. Dr. T. J. Werle, 209 W. Shiawassee Street, Lansing, Mich., Executive Secretary.

Missouri Valley, Medical Society of the, St. Joseph, Sept. 30-Oct. 2. Dr. Charles Wood Fassett, 115 East 31st Street, Kansas City, Mo., Secretary.

National Medical Association, Chicago, Aug. 25-28. Dr. Clyde Donnell, 121 Parrish Street, Durham, N. C., Secretary.

Nevada State Medical Association, Elko, Sept. 4-6. Dr. C. E. Piersall, 17 N. Virginia Street, Reno, Secretary.

Oregon State Medical Society, Medford, Sept. 2-4. Dr. C. L. Booth, 1021 Selling Bldg., Portland, Secretary.

Utah State Medical Association, Salt Lake City, Sept. 7-12. Dr. William L. Rich, Boston Building, Salt Lake City, Secretary.

Washington State Medical Association, Seattle, Sept. 17-18. Dr. C. H. Thomson, Cobb Building, Seattle, Secretary.

Wisconsin, State Medical Society of, Milwaukee, Sept. 16-18. Mr. J. G. Crownhart, 558 Jefferson Street, Milwaukee, Executive Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL for a period of three days. No foreign journals are available prior to 1920, nor domestic prior to 1923. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

30: 1-146 (July) 1925

History of Pediatrics. J. Ruhräh, Baltimore.—p. 1.
*Insulin in Treatment of Malnourished Infants. F. F. Tisdall, A. Brown, T. G. H. Drake and M. G. Cody, Toronto.—p. 10.
*Anemia in New-Born Infant: Case. H. N. Sanford, Chicago.—p. 19.
*Gastric Analyses in Normal Infants and in Those Convalescent From Diarrhea. W. C. Davisson, Baltimore.—p. 23.
*Kidney: Filter for Bacteria. V. Effect of Nephrotoxins. H. F. Helmholz and R. S. Field, Rochester, Minn.—p. 33.
*Calcification of Rachitic Bones in Vitro. P. G. Shipley, B. Kramer and J. Howland, Baltimore.—p. 37.
*Inorganic Constituents of Blood in Nephritis of Children. Jerome L. Kohn, New York.—p. 40.
Growth of Chinese. V. B. Appleton, Honolulu.—p. 43.
*Ventricular Escape; Unusual Cardiac Rhythm in Child. J. E. Wood, Jr., University, La.—p. 50.
*Relapses in Measles. I. H. Goldberger, New York.—p. 55.
*Unresolved Pneumonia in Children. Treatment with Roentgen Rays. G. N. Krost, Chicago.—p. 57.
*Antirachitic Action of Cod Liver Oil. Comparison of Fresh Oil with Concentrate Prepared from Oil. H. E. Dubin, New York.—p. 72.
*Ectopia Cordis: Case. G. D. Cutler and G. Wilens, Boston.—p. 76.
Congenital Transduodenal Bands. Three Cases. F. C. Neff and R. L. Haden, Kansas City, Mo.—p. 82.
Progress in Pediatrics. Anatomy, Physiology and Pathology of Infancy and Childhood. J. B. Holmes, Baltimore.—p. 87.

Insulin for Malnourished Children.—The effect of the administration of insulin to nine malnourished infants has been studied by Tisdall et al. A definite increase in weight was obtained in about 50 per cent. of the cases. In these cases in many instances, however, other factors were present which lessened the probability that insulin was the cause of the increase in weight.

Anemia in New-Born Infant.—The case reported by Sanford showed a marked anemia in an apparently healthy newborn infant at birth. The blood showed evidence of extreme activity, such as high leukocyte count, and decreased blood platelet formation. There was no evidence of blood destruction, for the jaundice, appearing on the second day and disappearing on the fourth, occurred during improvement in the blood picture, and normal bleeding and coagulation time. Furthermore, the van den Bergh test for hepatic bilirubin was positive, suggesting this jaundice to be of hepatic origin. During this time the liver also decreased in size. The spleen steadily decreased in size as the blood picture improved, and this without treatment of any kind. The mother's blood picture was normal at the time of this delivery and at the former delivery, and also the older brother's blood was normal. There was no family history of syphilis, tuberculosis, debility or miscarriages. The child's recovery was rapid and complete without any treatment, except for slight roentgen-ray exposure when the extremities were photographed.

Gastric Analysis of Normal Infants and Those Suffering from Diarrhea.—Determinations were made by Davison of the hydrogen ion concentration and of the amylase and trypsin activity of forty-nine specimens of gastric contents from a series of normal infants and of those convalescent from diarrhea. Diets of some form of lactic acid milk increased the gastric acidity, but there was very little evidence that either these diets or the increased gastric acidity resulting therefrom destroyed many organisms in the stomach. The acidity of specimens collected less than six hours after a meal was higher than that of the specimens obtained later. Elevation of the body temperature and the presence of vomiting increased the gastric acidity. Practically no difference could be found in the reaction or cultures of the gastric contents of normal infants and of those convalescent from diarrhea.

Kidney Filter for Bacteria.—Helmholz and Field assert that injury to the kidney by mercuric chlorid or uranium acetate does not change the kidney filter for bacteria. Cantharidin in large doses produces sufficient damage to allow bacteria to pass through the kidney in four hours. In smaller doses, sufficient to produce definite hematuria, bacteria are held back for the usual period.

Calcification of Bones in Vitro.—According to Shipley et al. calcification of bones in vitro occurs as it does in vivo.

Inorganic Constituents of Blood.—It seems from the cases studied by Kohn that the inorganic constituents of the blood remain fairly normal and constant. One patient showed about the same sodium, potassium and calcium content in the blood when there was marked edema, when the edema was disappearing or when it was no longer visible. The inorganic analyses of the blood from chronic nephrosis, with or without edema, or acute hemorrhagic nephritis, show no marked differences in the inorganic salt content of the blood. One patient with hypertension, with a marked nitrogen retention showed no variation from the normal so far as the sodium, potassium and calcium content were concerned.

Unusual Cardiac Rhythm in Child.—A report of an unusual cardiac rhythm in a child, aged 11 years, is presented by Wood. The rhythm was normal, except for sinus arrhythmia and for one premature beat about every one and one-half minutes. Escape of the ventricle occurred in the second, seventh, eighth, ninth and tenth beats, apparently dependent on the lengthened diastolic pauses of the sinus slowing of expiration.

Relapses in Measles.—The three cases of relapsing measles reported by Goldberger were identical both in severity and duration to the original attacks. The relapse occurred on the twenty-fifth, seventeenth and twenty-eighth day, respectively. The third patient had received convalescent measles serum immediately after first exposure to the disease, but with no preventive effect.

Roentgenotherapy of Unresolved Pneumonia.—In twelve cases of unresolved pneumonia treated by Krost by roentgen ray there was apparent benefit in eleven. There seemingly was fever and constitutional reaction in three cases. This was temporary and probably beneficial.

Antirachitic Action of Cod Liver Oil.—It is evident from Dubin's work that the concentrate—the ether soluble, nonsaponifiable fraction—of cod liver oil is just as potent an antirachitic agent as the oil from which it is made, gram for gram. In order that the requirements for reproduction, as well as for growth, may be provided for, the diet should be so arranged that an excess of vitamins is present. The nonsaponifiable fraction of cod liver oil is admirably suited for this purpose, since it furnishes the necessary fat-soluble vitamins without disarranging the balance between fats, proteins and carbohydrates.

Ectopia Cordis.—A case of ectopia cordis is reported by Cutler and Wilens. In addition to the ectopia, anomalies of circulation were present; namely, patent foramen ovale, patent ductus arteriosus and stenosis of the aortic isthmus. An unsuccessful attempt was made to cover the heart with skin flaps.

American Journal of Electrotherapeutics and Radiology, New York

43: 213-250 (June) 1925

Teaching of Physiotherapeutic Measures. W. H. MacCraken, Detroit.—p. 213.
Treatment of Severe Metabolic Arthritis. S. A. Twinch, Newark, N. J.—p. 216.
Some of My Failures. H. E. Stewart, New Haven, Conn.—p. 225.
History of American Electrotherapeutic Association. W. B. Snow and G. B. Massey.—p. 230.

American Journal of Hygiene, Baltimore

5: 371-558 (July) 1925

*Cultivation of Endameba Histolytica. W. C. Boeck and J. Drbohlav, Boston.—p. 371.
Factors Which Should Determine Selection of Anthelmintic in Geographic Area. F. L. Soper, New York.—p. 408.
*Interracial Variation in Infant Mortality. J. V. DePorte, Baltimore.—p. 454.

Methods of Diagnosing Hookworm Infection on Egg Counting Methods. W. S. Sweet, New York.—p. 497.
*Epidemiologic Importance of Diphtheria Carriers. J. A. Doull and H. Lara, Baltimore.—p. 508.
Association of Bacillus Bronchisepticus and Bacterum Lepisepticum with Rabbit Snuffles. C. G. Bull and C. M. McKee, Baltimore.—p. 530.
*Severity of Hookworm Disease in Chinese Group, as Tested by Hemoglobin Readings for Anemia; Egg Counts for Degree of Infestation. N. R. Stoll and H. W. Tseng, Peking, China.—p. 536.

Cultivation of Endameba Histolytica.—Two strains of endameba were obtained by Boeck and Drbohlav in culture from two cases of amebiasis. These were morphologically identical with the endameba in the feces of the patients and with *Endameba histolytica*. The "K" strain was grown in cultures for eight months and eleven days and the "E" strain for three months. The most suitable artificial environment for the growth of *E. histolytica* was in either the Locke-egg-serum or Locke-egg-albumin medium, at a temperature of 27 C. An initial reaction of the medium of p_H 8.2-7.8 is necessary. Both strains isolated in cultures proved to be pathogenic for kittens in which the produced acute dysentery, colitis and, in two kittens, liver abscess. The virulence of the amebae was not influenced by prolonged cultivation.

Interracial Variation in Infant Mortality.—In a six-year period, 1916-1921, studied by Deporte he found a definite decline in the rate of infant mortality in all racial groups. The decline has been both absolute and relative, reducing the degree of variation between the rates of the diverse groups. The differences in the rates of infant mortality of the several groups have been due primarily to differences in the rates of mortality from diseases of the digestive and respiratory systems, and therefore, in large measure, influenced by environmental factors which are, theoretically, preventable. There has been less change, absolute or relative, in the rates of mortality of infants under one month. These deaths are brought about by causes as yet little understood, and except in the case of premature births, not likely at the present time to yield to organized public effort. The differences between the various groups in these rates very probably have a biologic basis, and, in this sense, may be termed racial.

Epidemiologic Importance of Diphtheria Carriers.—In a study made by Doull and Lara of 758 clinical cases of diphtheria in Baltimore it was found that of 2,799 family contacts not receiving prophylactic antitoxin, fifty-nine, or 2.1 per cent., were attacked later than one and not later than thirty days following the onset of the primary case. In contrast to this, investigation has shown that in the family contacts of 1,044 school carriers, estimated to number 4,665, only fourteen cases were reported within thirty days of the discovery of the carrier. This study fails to show any significant distinction between the risk of attack for those exposed respectively to carriers classified as "virulent," "avirulent" and "not tested."

Hookworm Disease.—This study by Stoll and Tseng constitutes most important direct evidence on the validity of egg count data, "basis of formed feces," in analyzing community infestation for hookworm disease. It constitutes indirect evidence also on the validity of the egg count technic and a general correspondence between egg counts and worm infestations.

American Journal of Obstetrics and Gynecology, St. Louis

9: 745-898 (June) 1925

Coincidence and Interference of Uterine Tumors. O. Frankl, Vienna.—p. 745.
*Congenital Polycystic Kidneys; Fourteen Cases. J. E. Davis, Detroit, Mich.—p. 758.
*Relation of Dysmenorrhea to Interstitial Thyrotoxicosis as Proved by Therapeutic Measures. A. E. Hertzler, Halstead, Kan.—p. 783.
*Streptococci from Chronic Infection of Cervix Uteri and Fallopian Tubes. C. W. Barrett, A. F. Lash and I. Pilot, Chicago.—p. 797.
Indications for and End-Results of Sturmdorf Operation. W. A. Coventry, Duluth, Minn.—p. 804.
*Clinical Similarity Between Eclamptic Toxemia and Acute Glomerulonephritis. R. D. Mussey, Rochester, Minn.—p. 808.
*Relation of Postoperative Peritonitis to Periodic Epidemics of Infection. R. R. Huggins, Pittsburgh.—p. 819.
Semicircular Mattress Suture of Vagina Immediately Following Labor. R. S. Tilles, St. Louis.—p. 823.
Technic of Classical Cesarean Section. J. S. Lawrance, Philadelphia.—p. 830.
Ethylene-Oxygen in Obstetrics. E. L. King, New Orleans.—p. 835.
Chronic Infections in Pregnancy. W. A. Fowler, Oklahoma City.—p. 837.
Rubin Test. T. R. Morgan, Philadelphia.—p. 843.
Three Hundred Pregnant Negro Women Having Four-Plus Wassermann. J. R. McCord, Atlanta, Ga.—p. 850.
Weight During Pregnancy. C. R. Hannah, Dallas, Texas.—p. 854.
Responsibility of Medical Profession in Further Reducing Maternal Mortality. A. Flint, New York.—p. 864.

Congenital Polycystic Kidneys.—It is of very great importance, in Davis' opinion, that the deformations of the urinary organs are usually a part of a multiple group of stigmata and that the condition of congenital polycystic kidneys is frequently associated with the same type of degenerative change in other organs, as, for example, in the liver in 19 per cent. of all cases reported in the literature and also with various deformities in other parts of the body. Davis concludes from the evidence gathered in this study that congenital polycystic kidneys are caused by defective protoplasm which may be inherited or congenital in obedience with the same biologic laws governing the recessive characteristics illustrated in phylogenetic changes and in other congenital deformities.

Relation of Dysmenorrhea to Thyrotoxicosis.—Hertzler says that many young women present small goiters associated with mild degrees of thyrotoxicosis. Anatomically, these glands show changes in the colloid, inactive acinal epithelium and apparently an increase in the cells situated between the acini. Many of these patients have an associated dysmenorrhea without demonstrable anatomic changes in the pelvic organs. When these patients are treated in the conventional manner for their goiters, the dysmenorrhea disappears in the vast proportion of cases. This applies as well to the groin pains so commonly diagnosed chronic appendicitis, for the relief of which appendectomy is wholly impotent.

Bacteriology of Chronic Cervicitis.—The bacteriologic results of examinations made by Barrett, Lash and Pilot of fallopian tubes from 100 patients and of forty cervical cultures from the same patients were: *Streptococcus hemolyticus* was found in 14 per cent.; *S. viridans* in 21 per cent., and *S. indifferens* in 3 per cent. *S. hemolyticus* occurred in two of the forty cervical cultures; while *S. viridans* appeared in eleven instances. In two instances, *S. viridans* in the cervix was found associated with *S. viridans* in the tubes; and in two others, *S. hemolyticus* in the cervix was associated with *S. viridans* in the tubes.

Clinical Similarity Between Eclampsia and Glomerulonephritis.—Mussey reports eleven cases of eclamptic toxemia, in ten of which the clinical picture simulated acute glomerulonephritis. The outstanding features in this study are the comparatively rapid onset of symptoms which obtained in most of the cases, the hypertension and its rapid fall to normal, usually coincident with the increased urinary output, the disappearance of the edema, and amelioration of symptoms. The comparative absence of nitrogen retention in the blood, and the apparently complete recovery of most of these patients is also similar to those patients with acute glomerulonephritis. As this study lacks histologic data, comment is made only on the similarlity between the clinical picture and renal function of the two groups.

Periodicity of Postoperative Peritonitis.—The mortality from postoperative peritonitis in Huggins' work previous to 1917-1918 was 2 per cent. Since that time it has exactly doubled. He believes that there has been some relationship between this postoperative complication and the influenza epidemics that have occurred during the last six years.

American Journal of Ophthalmology, Chicago

8: 513-600 (July) 1925

Tower Skull: Oxycephalus. F. A. Davis, Madison, Wis.—p. 513.
Oxycephaly with Ocular Complications. M. L. Lerner, Rochester, Minn.—p. 542.
Toti's Operation for Dacryocystitis; Sixteen Cases. V. L. Raia, Providence, R. I.—p. 547.
Retrobulbar Spindle Cell Sarcoma. A. W. Greene, Schenectady, N. Y.—p. 550.
Adrenalin Chlorid; Subconjunctival Injection for Glaucoma. G. O. Ring, Philadelphia.—p. 553.
Refraction. E. J. Gardiner, Chicago.—p. 557.

American Journal of Roentgenology and Radium Therapy, New York

13: 514-613 (June) 1925

Cholecystography. S. Moore, St. Louis.—p. 515.
Roentgen-Ray Diagnosis of Bronchiectasis. A. B. Moore and W. J. Marquis, Rochester, Minn.—p. 527.
*Roentgenography of Hydatid Cysts of Lung. C. Heuser, Buenos Aires, S. A.—p. 529.
*Stomach with Two Gas Bubbles: Case. J. R. Lutz, New York.—p. 534.
Common Causes of Shoulder Pain. P. F. Butler and J. F. Elward, Boston.—p. 536.
Chronic Infection of Gastro-Intestinal Tract: Roentgen-Ray Manifestations. C. Eastmond.—p. 541.
Cancer of Tongue and Mouth. C. C. Simmon, Boston.—p. 545.
Roentgen-Ray Treatment of Chronic Spondylitis Deformans (Chronic Socro-Iliac Lumbalgia or Chronic Vertebral Rheumatism). C. A. Pfender, Washington, D. C.—p. 551.
Treatment of Purpura Hemorrhagica by Roentgen-Ray Irradiation of Spleen. H. K. Pancoast, E. P. Pendergrass and T. Fitz-Hugh, Philadelphia.—p. 558.

Hydatid of Lung in Buenos Aires.—Heuser says that in Buenos Aires hydatid cysts of the lung are seen with equal frequency in men, women and children; they are as frequent on the left as on the right side; and they occur with equal frequency in the country and in the city.

Stomach with Two Gas Bubbles.—A case is presented by Lutz which showed: (1) Gastro-enterostomy functioning well sixteen years after operation. (2) Totally occluded pylorus, probably done as emergency operation for injury; ten years without symptoms. (3) Two gas bubbles. The usual gas bubble is in the fundus and a second bubble is in the antrum with two corresponding fluid levels. (4) Reverse peristalsis in the antrum so that the stomach is divided into two parts functionally, the peristalic action of both parts moving contents toward a centrally located gastro-enterostomy stoma.

Annals of Clinical Medicine, Baltimore

3: 731-796 (June) 1925

Contributions of Medical Department of United States Army to American Medicine. M. W. Ireland, Washington, D. C.—p. 731.
Contributions of Medical Corps, United States Navy, to American Medicine. E. R. Stitt, Washington, D. C.—p. 747.
Twenty-Five Years' Prognosis in Public Health. H. S. Cumming, Washington, D. C.—p. 761.
Medical Work in Panama Canal Zone as Viewed by an Outsider. W. G. Morgan, Washington, D. C.—p. 772.

Annals of Medical History, New York

7: 103-204 (June) 1925

Chinese Drug Stores. K. K. Chen, Peking, China.—p. 103.
Stephan Hales (1677-1761). G. E. Burget, Portland, Ore.—p. 109.
Medical Essay on Timaeus. J. Wright, Pleasantville, N. Y.—p. 117.
Gerhard Henrik Armauer Hansen (1841-1912). I. Kobro, Oslo, Norway. —p. 127.
Experimental Cancer, Historical Retrospect. E. B. Krumbhaar, Philadelphia.—p. 132.
Maimonides on "Physical Hygiene." L. J. Bragman, Syracuse, N. Y. —p. 140.
Samuel Thomson (1769-1843). J. M. Ball, St. Louis.—p. 144.
Selections from Gibson's "Rambles in Europe." F. R. Packard, Philadelphia.—p. 153.
Thomas Sydenham, Clinician. D. Riesman, Philadelphia.—p. 171.
Curiosities from Collection of Calculi in Museum of Royal College of Surgeons. A. Randall, Philadelphia.—p. 181.

Boston Medical and Surgical Journal

193: 43-90 (July 9) 1925

Roentgen-Ray Diagnosis of Disease in Nasal Accessory Sinuses. G. W. Grier, Pittsburgh.—p. 50.

Canadian Medical Association Journal, Montreal

15: 685-770 (May) 1925

Trend of Medical Education and Medical Service. G. S. Young.—p. 685.
Present Standing of Therapeutics. R. D. Rudolf.—p. 689.
Successive Stages in Control of Tuberculosis. E. R. Baldwin.—p. 693.
*Extractives of Liver Possessing Blood Pressure Reducing Properties. W. J. MacDonald.—p. 697.
Control of Blood Pressure with Liver Extracts. A. A. James and N. B. Laughton.—p. 701.
Bacterial Phagocytosis by Epithelial Cells of Conjunctiva. S. H. McKee. —p. 703.
*Morbid Anatomy of Rheumatic Fever. S. Meltzer.—p. 705.
*Acute Septic Tracheitis. J. G. Strachan.—p. 708.
Rheumatic Fever in Childhood. H. B. Cushing.—p. 711.
Failing Vision After Middle Life Without Associated Pain. J. V. Connell.—p. 713.
Infections of Hands. G. E. Wilson.—p. 715.
Influence of Natural Chemical Stimuli on Movements of Alimentary Canal. B. P. Babkin.—p. 719.
Value of Diazo Color Reaction in Differential Diagnosis of Uremia. I. M. Rabinowitch.—p. 725.
Disadvantages of Workmen's Compensation Act Lead Employer to Be Less Interested in Health of Employee. W. L. T. Addison.—p. 728.
Postoperative Treatment of Flexion at Hip. A. MacK. Forbes.—p. 730.

Liver Extracts Lower Blood Pressure.—MacDonald reports blood pressure observations on a series of normal rabbits and also on a series of cases of clinical arterial hypertension in which there has been a fall in both systolic and diastolic pressures, following the administration of certain extracts prepared by him from the liver. In all, thirty-three clinical cases have been studied. In twenty-five cases the patients experienced no disagreeable symptoms, most of them reporting apparent relief of the unpleasant symptom of hypertension. In eight cases there followed reactions of varying degree, some of which closely resembled protein shock, i. e.: chill, rise in temperature lasting several hours, nervousness, loss of appetite and weakness, together with a sharp fall in both systolic and diastolic pressures. In the cases free from symptoms, one injection served to depress the blood pressure from one to three or more days, according to size of dosage. In all the favorable cases the return to hypertension was gradual. The chemical nature of these liver extracts has not yet been ascertained, but these experiments indicate that the active material is not a protein. It would therefore appear that these extracts possess some specific quality which exerts a definite depressor effect on normal blood pressure in animals and marked hypertension in man.

Morbid Anatomy of Rheumatic Fever.—Meltzer asserts that acute rheumatic fever presents a typical histologic picture by which the lesions can be recognized, whether they occur in the vascular system, the joints, or the skin. It is a generalized disease of the cardiovascular system, striking chiefly the heart and the aorta, in which the joint lesions play only a subsidiary part. The exudative lesion in the joints is a minor factor.

Acute Septic Tracheitis.—The three cases reported by Strachan all occurred in healthy, robust male children, between the ages of 2 and 9 years. They developed in the months of January, February and March. In each case the onset was sudden, with dyspnea, hoarseness and fever, the dyspnea becoming progressively worse. Although hoarseness was present, in no case was the voice lost. The obstruction was subglottic and was relieved by tracheotomy, intubation being of no avail. All these cases were thought at the first to be laryngeal diphtheria and were treated as such. Cough, although present, was negligible. The progression of the disease was rapid. The dyspnea was very troublesome and the toxemia great. The duration in each case was about three days. Toxemia was the apparent cause of death, but no doubt the labored breathing must have been a factor in the myocardial fatigue. Examination post mortem showed varying degrees of superficial ulceration of the tracheal mucosa, very marked in the subglottic region and diminishing in the lower part of the trachea. In one case, in which the duration had been somewhat shorter than in the others, the lower third of the mucosa appeared to be normal. Bronchitis was present in each case in some degree. Bronchopneumonia was present also but in no case was it widespread.

Florida Medical Association Journal, St. Augustine and Jacksonville

12: 1-26 (July) 1925

Looking Backward Over Fifty Years of Health Work in Florida. J. Y. Porter, Key West.—p. 1.
Observations Relating to Feeding of Children with Bacillary Dysentery. J. D. Love, Jacksonville.—p. 3.
Case of Double Uterus with Pregnancy of Each. W. M. Rowlett, Tampa.—p. 5.
Dactylomegaly; Bilateral; Only Case Reported. R. R. Killinger, Jacksonville.—p. 6.
Abrasions. T. M. Rivers, Kissimere.—p. 10.
Postencephalitic Syndrome, Potent Conjugate Upward Movement of Eyes with Temporary Fixation. G. H. Benton, Miami.—p. 12.
Strictures of Ureter. H. D. Synder, Pensacola.—p. 13.

Georgia Medical Association Journal, Atlanta

14: 267-311 (July) 1925

Making a Diagnosis. R. M. Harbin, Rome.—p. 267.
History of Medicine and Surgery in Georgia. J. L. Campbell, Atlanta.—p. 271.
Focal Infection Below Neck. J. H. Butler, Augusta.—p. 276.
Metastatic Infection as Related to Foci About Head. C. I. Bryans, Augusta.—p. 278.
Anencephalic Monster: Case. O. R. Thompson, Macon.—p. 283.
Relation of Preventive Pediatrics to Epilepsy. G. W. H. Cheney, Atlanta.—p. 285.

Illinois Medical Journal, Oak Park

48: 1-82 (June) 1925

Physical Factors in Production of Appendicitis. H. Gray, Montreal.—p. 33.
Obstetrics in Home. Analysis of 500 Cases. J. J. Gill, Chicago.—p. 38.
Goiter. W. I. Terry, San Francisco.—p. 46.
Injuries to Blood Vessels; Management. R. W. McNealy, Chicago.—p. 48.
Periodic Health Examination Campaign. H. Swanberg, Quincy.—p. 51.
Classification of Goiter from Standpoint of General Practitioner. J. H. Hutton, Chicago.—p. 52.
Prognosis in Heart Disease. F. A. Willius, Rochester, Minn.—p. 55.
Hypertonic Glucose Solution in Treatment of Syphilis. F. Herb Chicago.—p. 61.
Medical Treatment of Empyema; Chemotherapy. R. G. Major, Kansas City, Kan.—p. 65.
American Physicians and Surgeons in Hungarian Universities. E. Horvath, Budapest, Hungary.—p. 68.
Contusions of Abdomen Associated with Visceral Injury. G. E. Brewer, New York.—p. 70.
Milk Sickness. M. Greer, Vandalia.—p. 75.
What is Diathermy? L. B. Bagnall, DeKalk.—p. 77.
Oil of Bitter Orange Peel with Ether Anesthesia. A. Weiss, Chicago.—p. 79.

Journal of Biological Chemistry, Baltimore

114: 229-507 (June) 1925

*Interfering Effect of Glycerol on Biuret Reaction. F. B. Seibert and E. R. Long, Chicago.—p. 229.
Mechanism of Oxidation of Thymine; 4,5-Dihydroxyhydrothymine (thymine glycol). O. Baudisch and D. Davidson.—p. 233.
*Proteins of Wheat Bran. II. D. B. Jones and C. E. F. Gersdorff, Washington, D. C.—p. 241.
Micro-Method for Determining Nitrogen. A. R. Rose, Newark, N. J.—p. 253.
Globulines of Jack Bean (Canavalia Ensiformis). II. J. B. Sumner and V. A. Graham, Ithaca, N. Y.—p. 257.
*Fat-Soluble Vitamins. XXIII. Induction of Growth Promoting and Calcifying Properties by Exposure to Light. H. Steenbock and A. Black, Madison, Wis.—p. 263.
*Id. XXIV. Cod Liver Oil. E. M. Nelson and H. Steenbock, Madison, Wis.—p. 299.
Production of Acidosis by Anoxemia. A. E. Koehler, E. H. Brunquist and A. S. Loevenhart, Madison, Wis.—p. 313.
Relation of Histidin and Arginine to Creatin and Purine Metabolism. W. C. Rose and K. G. Cook, Urbana, Ill.—p. 325.
Electrostatic Forces in Diffusion of Water Through Collodion Membranes Between Solutions of Mixed Electrolytes. E. F. Adolph, Baltimore.—p. 339.
*Nature of Heat Denaturation of Proteins. H. Wu and D. Y. Wu, Peking.—p. 369.
Saponins. III. W. A. Jacobs, New York.—p. 379.
Strophanthin. VII. Strophanthidin. W. A. Jacobs and A. M. Collins, New York.—p. 383.
Effect of Heat on Solubility of Calcium and Phosphorus Compounds in Milk. R. W. Bell, Ithaca, N. Y.—p. 391.
Influence of Diet on Synthesis of Hippuric Acid. W. H. Griffith, St. Louis.—p. 401.
Biochemical Study of Bone Growth. I. F. S. Hammett, Philadelphia.—p. 409.
Calcium Content of Body in Relation to Age, Growth and Food. H. C. Sherman and F. L. MacLeod, New York.—p. 429.
Blood Supply to Pancreas. W. S. Collens, New York.—p. 461.
Monoacetone Galactose. P. A. Levene and G. M. Meyer, New York.—p. 473.
Condensation of Monosaccharids by Means of Dilute Mineral Acid. P. A. Levene and R. Ulpts, New York.—p. 475.
*Physiologic Action of Parathyroid Hormone. J. B. Collip and E. P. Clark, Edmonton, Canada.—p. 485.

Interfering Effect of Glycerol on Biuret Reaction.—Seibert and Long found that glycerol interferes markedly with the delicacy of the biuret test, presumably through its combining power for copper hydroxid. This inhibitory action is of great significance in testing nonprotein bacteriologic culture mediums for the development of protein as a result of bacterial growth. Ammonium citrate in concentrations corresponding to those used in culture mediums does not inhibit the development of the biuret color.

Proteins of Wheat Bran.—The proteins of wheat bran, consisting essentially of a prolamin, a globulin and an albumin, have been analyzed by Jones and Gersdorff by the van Slyke method, and the distribution of nitrogen and the percentages of the basic amino-acids have been estimated. The wheat bran proteins, in general, are characterized by a high content of the basic amino-acids. This is particularly true of the albumin and globulin. The quantity of basic amino-acids found in the globulin exceeds that of most other vegetable proteins which have been studied. The significance of the high percentages of the so-called nutritionally essential amino-acids found is pointed out with respect to the nutritive value of the bran proteins.

Fat Soluble Vitamins.—Evidence of the antirachitic activation of fats is presented in considerable detail by Steenbock and Black using the line test, growth, and increased calcium content of bone, as criteria. Activated olive oil, kept in a stoppered bottle in the dark, was found unimpaired in activity after ten months. As in cod liver oil, the antirachitic potency of irradiated fats lies in their unsaponifiable constituents. Mineral oil cannot be activated.

Antirachitic Property of Cod Liver Oil.—According to Nelson and Steenbock the compounds responsible for the anti-ophthalmic and antirachitic properties of cod liver oil are nonprecipitable by digitonin. A petroleum ether solution of the unsaponifiable constituents of cod liver oil standing for a year and a half in the laboratory did not lose its anti-ophthalmic or antirachitic potency. Cholesterol isolated from cod liver oil was antirachitically inactive, but exposure to ultraviolet light made it active.

Heat Denaturation of Proteins.—Evidence is adduced by Wu and Wu to show that the heat denaturation of proteins is the same process as the denaturation of proteins by dilute acids and alkalies at ordinary temperatures, and that the underlying reaction is one of hydrolysis.

Action of Parathyroid Hormone.—The preliminary experiments on the physiologic action of a hormone contained in certain parathyroid gland extracts have been extended and amplified by Collip and Clark. The active principle has been obtained in a more purified, concentrated, and stable form. A method of extracting parathyroid glands is suggested and a provisional unit of potency defined.

Journal of Experimental Medicine, Baltimore

42: 1-122 (July 1) 1925

*Microbic Virulence and Host Susceptibility in Paratyphoid-Enteritidis Infection of White Mice. VIII. Effect of Selective Breeding. L. T. Webster, New York.—p. 1.
Surface Tension of Serum. XIV. Change in Surface Tension Occurring as Results of Immunization. P. L. du Noüy and L. E. Baker, New York.—p. 9.
Studies in Experimental Syphilis. III. Possibility of Cure of Syphilis with Arsphenamin. A. M. Chesney and J. E. Kemp, Baltimore.—p. 17.
*Id. IV. Survival of Treponema Pallidum in Internal Organs of Treated and Untreated Rabbits. A. M. Chesney and J. E. Kemp, Baltimore.—p. 33.
*Blood Sugar Studies. I. Rapid Alterations in Level as Result of Injection of Killed Bacteria. I. T. Zeckwer and H. Goodell, Boston.—p. 43.
*Id. II. Changes in Fatal Bacterial Anaphylaxis. I. T. Zeckwer and H. Goodell, Boston.—p. 57.
Organ Weights of Normal Rabbits. W. H. Brown, L. Pearce and C. M. Van Allen, New York.—p. 69.
*Drainage of Thoracic Duct in Experimental Peritonitis. B. Steinberg, Cleveland.—p. 83.
Relation of Hyperglycemia to Relative Blood Volume, Chlorin Concentration and Chlorin Distribution in Blood of Dogs. L. Foshay, Cleveland.—p. 89.
*Urobilin Physiology and Pathology. IV. Urobilin and Damaged Liver. R. Elman and P. D. McMaster, New York.—p. 99.

Susceptibility in Paratyphoid-Enteritidis Infection.—The effect of selective breeding on host resistance was studied by Webster. Survivors of an experimental mouse typhoid infection, selected and bred for a number of consecutive generations, gave birth to offspring which were more resistant to the disease than a random group of the same inbred race. Offspring of females most susceptible to this infection gave birth to individuals which were more susceptible than a group of similar unselected mice.

Experimental Syphilis.—The results of this study by Chesney and Kemp support the idea that failure to reinocu-

late a treated syphilitic animal does not necessarily mean the existence of the first infection but might be interpreted as indicating the presence of an acquired resistance which persists in rabbits in which no trace of the first infection can be demonstrated.

Blood Sugar Level Following Injection of Killed Bacteria.—A rapid rise in the blood sugar level of rabbits was produced by Zeckwer and Goodell by intravenous injections of killed *Bacillus proteus*, *Bacillus coli* and *Bacillus paratyphosus* B, which returned to nearly the previous level in a few hours. A less pronounced rise in blood sugar was produced by killed *B. paratyphosus* A and *B. enteritidis*.

Blood Sugar Changes in Fatal Bacterial Anaphylaxis.—Zeckwer and Goodell found that during bacterial anaphylaxis there is a gradual rise in the blood sugar level, which attains an extremely high value at the time of death. The curve of blood sugar is quite similar whether anaphylaxis is induced by organisms which affect the blood sugar in the unsensitized animal or by organisms which have no such effect. No instances occurred in which there was not a marked hyperglycemia in anaphylaxis.

Thoracic Duct Drainage in Peritonitis.—When care is taken to produce a peritonitis, which in itself is almost uniformly fatal, drainage of the thoracic duct in dogs had no favorable influence on the course or result of the peritonitis. Under the conditions of Steinberg's experiments the thoracic duct did not serve in any important way as a drainage tract for bacterial contamination of the peritoneal cavity.

Urobilin and Damaged Liver.—A variety of evidence is presented by Elman and McMaster all of which supports the view that in the uninfected animal the intestinal tract is the only place of origin of urobilin, not merely under normal circumstances, but when there is biliary obstruction. Animals rendered urobilin-free by collection of all of the bile from the intubated common duct remain urobilin-free even after severe hepatic injury. Urobilinuria was never found after liver damage, except when bile pigment was present in the intestine. The evidence presented is said to prove that urobilinuria is an expression of the inability of the liver cells to remove from circulation the urobilin brought by the portal stream, with result that the pigment passes on to kidney and urine. Urobilinuria occurs with a far less degree of liver injury than does bilirubinuria.

Journal of Nervous and Mental Diseases, New York

62: 1-112 (July) 1925

*Atypical Psychoses and Heterologous Hereditary Taints. J. C. Smith, Copenhagen, Denmark.—p. 1.
Absence of Cord Changes in Case with Clinical Picture of Dorsal Myelitis. G. B. Hassin and J. Favill, Chicago.—p. 33.
Cartesian Method and Biologic Conception of Human Personality. R. Mourgue, Nimes, France.—p. 36.
Dementia Praecox in Twins. D. A. Johnston, Cincinnati.—p. 41.

Atypical Psychoses and Hereditary Taints.—The results of Smith's work may be summed up as follows: If heterologous hereditary characters are united, it will in the descending line entail the occurrence of a considerable number of psychoses, about one half of which are purely segregated as the pure psychoses of the separate dispositions, whereas the other half present combinations of the various phenotypes in the theoretically imaginable ways.

Journal of Urology, Baltimore

13: 575-726 (June) 1925

*Elimination of Phenolsulphonephthalein by Normal and Diseased Kidneys. E. C. Shaw, Baltimore.—p. 575.
Cysts of Prostate and Urethra. M. B. Wesson, San Francisco.—p. 605.
Mercurochrome Intravenously in Urologic Infections. H. H. Young, Baltimore.—p. 633.
Gonorrheal Infections of Kidney. H. L. Cecil, Dallas, Texas.—p. 673.
Habit Bladders. P. S. Peloure, Philadelphia.—p. 679.
New Pathogenic Organism (Corynebacterium Thompson); Epidemic of Infection of Urinary Fistula. E. C. Shaw and J. H. Hill, Baltimore.—p. 689.
Two Cases of Urinary Retention Due to Prostatic Sclerosis Relieved by Radiotherm Cauterization. C. W. Collings, New York.—p. 715.

Elimination of Phenolsulphonephthalein by Kidneys.—The normal curve of the phenolsulphonephthalein elimination has been determined by Shaw by a series of forty-four tests on twenty-three normal subjects in which the urine was collected at fifteen-minute intervals for two hours. The curve is characterized by an average output of 40 per cent. during the first fifteen-minute period, 17 per cent. during the second, 8 per cent. during the third, 4 per cent. during the fourth and a gradual decrease to 0.5 per cent. during the eighth fifteen-minute period. There were one or more tests performed in the same manner in fifty-six cases with known renal lesions. All of these cases in which renal insufficiency was demonstrated by any other tests showed definite abnormalities in the curve of phthalein elimination and in several cases the presence of an abnormal curve indicated impending renal failure while the other tests were negative.

Medical Journal and Record, New York

122: 61-120 (July 15) 1925

Multiple Stage Operations Versus Immediate Excision of Pathology. F. W. Bancroft, New York.—p. 61.
*Use of Dental Stent in Skin Grafts of Middle Ear and Mastoid Cavities. J. P. de River, San Francisco.—p. 63.
Chronic Prostatitis; Focal Aspects. J. K. Holloway and W. H. Von Lackum, Rochester, Minn.—p. 64.
Case of Bilateral Gynecomastia. F. Y. Durrance, New Orleans.—p. 67.
Diathermy in Pelvic Infections. T. H. Cherry, New York.—p. 69.
Digestive Symptoms Caused by Disease of Abdominal Vessels. I. W. Held, New York.—p. 71.
Transposition of All Viscera. J. M. Cahan, Philadelphia.—p. 75.
*Experiences with Cholecystography. M. Einhorn, W. H. Stewart and E. J. Ryan, New York.—p. 77.
*Itching Skin Symptoms of Systemic Disease. W. H. Goeckerman, Rochester, Minn.—p. 83.
Dercum's Method of Treating Neurosyphilis. D. L. Kerlin, Shreveport, La.—p. 86.
Pruritus Ani. C. Goldman, Brooklyn.—p. 88.
*Treatment of Acne by Combined Use of Roentgen-Ray and Mercury Quartz Light. E. F. Traub, New York.—p. 90.
Parasitic Eczema. R. Boenke, New York.—p. 91.
Rhus Dermatitis: Treatment with Poison Ivy Extract. R. O. Clock, Pearl River, N. Y.—p. 93.
Causes of Severe Syphilitic Lesions. J. Whittenberg, Brooklyn.—p. 94.
Bismuth in Treatment of Syphilis. G. J. Muellerschoen, Philadelphia.—p. 97.
Modern Medical Problems in Plato. J. Wright, Pleasantville, N. Y.—p. 99.
Fifty Years in Practice of Medicine. E. E. Montgomery, Philadelphia.—p. 101.

Use of Dental Stent in Skin Grafting.—When it is desired to obliterate completely the mastoid and middle ear cavities, after having the wound prepared for the reception of a skin graft, de River immerses a sheet of sterile dental molding compound in hot water for a period of thirty seconds. It is then taken out and allowed to cool, until it becomes flexible but not gummy. The compound is now packed into the mastoid cavity and middle ear and allowed to remain there until it hardens. With this impression of the cavity the graft is then obtained, preferably from the thigh, taking enough epidermis to cover the cavities. It is then spread over the impression compound, raw surface outward, making sure that there is no turning in of the edges. This done, the molding compound, with the graft lying around it, is inserted into the mastoid wound and firm pressure applied, so that it will slip into place and approximation of surfaces be obtained. The mastoid wound is allowed to remain open and a gauze pad is placed over it. Drainage is obtained through the external auditory canal by a gauze wick and a pressure bandage is applied to the mastoid wound. The bandage is removed in four days, the pressure compound taken out and the wound closed under local anesthesia.

Cholecystography.—The administration of tetra-iodophenolphthalein by mouth or jejunum, not in large doses is preferred by Einhorn et al. to the intravenous method, since the reactions are less following oral administration.

Itching Skin.—Goeckerman emphasizes the importance of regarding an itching skin as a signal of systemic disturbance which needs adjustment before the patient can be given proper treatment. The habit of merely prescribing some local antipruritic, so often indulged in, brings discredit to the profession. Each patient with an itching skin should receive close individual study, as the associated conditions are so variable. Only such careful consideration, looking farther than merely symptomatic relief, will result in permanent relief.

Treatment of Acne by Light.—Roentgen-ray treatment of acne, Traub says, is advantageously supplemented by the regular and careful removal of all comedones and the drainage of all deep pustules and abscesses. This greatly reduces the amount of scarring which would otherwise result were the roentgen rays employed alone. The artificial sunburn following the course reduces scarring greatly, peels off the dry and wrinkled skin, effaces any pigmentation, and probably lessens the danger of any roentgen-ray sequelae. By alternating one-quarter unit roentgen ray with mercury light treatment, at weekly intervals, all danger of a radiodermatitis is eliminated and the end result is most gratifying.

New Orleans Medical and Surgical Journal

78: 1-58 (July) 1925

Synergistic Analgesia in Labor. C. A. Wallbillich, New Orleans.—p. 1.
Pharyngeal Bursitis. E. L. Wilkins, Clarksdale, Miss.—p. 5.
Puerperal Septicemia. J. M. Bodenheimer, Shreveport, La.—p. 8.
Iridotasis for Glaucoma. J. S. Dunn, New Orleans.—p. 10.
Significance of Colloidal Properties of Gelatin in Special Dietaries. T. B. Downey, Pittsburgh.—p. 12.
Relation of Focal Infections to Ocular Diseases. W. B. Smith, Shreveport, La.—p. 14.
Parinaud's Disease. E. L. Posey, Jackson, Miss.—p. 18.
Massive Excision of Subcutaneous Fat. A. P. Heineck, Chicago.—p. 20.
Sarcoma of Duodenum. C. J. Miller, New Orleans.—p. 27.
Roentgen-Ray Therapy. H. G. F. Edwards, Lafayette, La.—p. 28.

New York State Medical Journal, New York

25: 825-854 (July) 1925

Recent Advancements in Cholecystography. W. H. Stewart, M. Einhorn and E. J. Ryan, New York.—p. 825.
Tonsil Problem. A. M. Rooker, Niagara Falls.—p. 828.
Hornell Breast Feeding Demonstration. B. R. Wakeman, Hornell.—p. 831.

Northwest Medicine, Seattle

25: 309-356 (July) 1925

Diagnosis and Treatment of Tumors of Spinal Cord. A. W. Adson, Rochester, Minn.—p. 309.
Chest Surgery. J. E. Else, Portland.—p. 317.
*Periarterial Sympathectomy. E. W. Rockey, Portland.—p. 323.
Surgery of Gallbladder. R. C. Coffey, Portland.—p. 326.
Diagnosis of Urogenital Tuberculosis. C. H. Doe, Tacoma.—p. 331.
Practical Examination for Renal Insufficiency. C. Ferguson, Spokane.—p. 334.
Inlying Ureteral Catheter. W. J. Stater, Portland.—p. 337.
Multiple Self-Inflicted Fatal Wounds. T. F. Mullen, Pocatello, Idaho.—p. 338.
Lymphosarcoma of Appendix and Cecum. C. E. Hagyard, Seattle.—p. 342.
Actinomycosis of Nasopharynx and Soft Palate. G. W. Montgomery, Caldwell, Idaho.—p. 344.
Goodfellowship. W. H. Heckman, Central Point, Ore.—p. 345.

Periarterial Sympathectomy.—Two of the three patients operated on by Rockey have evidently been definitely benefited. One case is of special interest in that two sets of arteries were involved.

Oklahoma State Medical Association Journal, Oklahoma City

18: 152-179 (July) 1925

Diarrhea in Infants from Standpoint of General Practitioner. C. Brydia, Ada.—p. 152.
Lactic Acid Milk in Artificial Feeding. C. V. Rice, Muskogee.—p. 154.
Diet Requirements of Infant. C. W. Arrendell, Ponca City.—p. 156.
Acute Otitis Media. H. S. Browne, Ponca City.—p. 159.

Radiology, Omaha

5: 1-92 (July) 1925

Treatment of Cancers of Uterine Cervix and Body. C. F. Burnam and W. Neill, Jr., Baltimore.—p. 1.
Irradiation in Cancer of Cervix. F. J. Taussig, St. Louis.—p. 5.
Etiology, Pathology and Treatment of Cancer of the Cervix. D. T. Quigley, Omaha.—p. 9.
*Myeloid Myeloma. S. Moore, St. Louis.—p. 18.
Roentgen-Ray Treatment of Bone Tuberculosis. J. D. Southard, Fort Smith, Ark.—p. 34.
Radiation Treatment of Bone Tumors. W. E. Costolow, Los Angeles.—p. 37.
New Device and Technic for Making Radiographs of Mastoids in Law and in Arcelin Positions. A. Granger, New Orleans.—p. 44.
Radioactive Substances; Therapeutic Uses. J. Muir, New York.—p. 53.
Physiology of True Optical View by Means of Stereoscopic Radiograph. E. G. Beck and E. Smith, Chicago.—p. 60.
Effect of Roentgen-Ray on Callus Formation in Ununited Fractures. E. A. Pohle, Cleveland.—p. 67.
Lymphosarcoma of Cecum; Case. T. S. Swan, Rochester, Minn.—p. 71.
Relation of Roentgen Ray to Newer Methods of Extraction. B. S. Gardner, Rochester, Minn.—p. 73.

Myeloid Myeloma.—Moore describes the bone changes found in chloroma of the myeloid type, or a myelocytoma, for which a unique roentgen-ray picture is claimed. Four cases are studied and contrasted, for which diverse radiologic findings are described, as distinctive from each other and from other diseases involving bone. They are likewise radiologically contrasted with an example of skeletal carcinosis. A varying blood picture and clinical course is presented in the four cases, along with differing histologic findings, which are claimed to be distinctive for four separate diseases. These cases are presented to establish the idea that there are four malignant tumors of the bone marrow, distinct from the leukemias and from the other malignant diseases involving bone, and that they are not sarcomatous, but hematogenetic.

Tennessee State Medical Association Journal, Nashville

18: 1-27 (May) 1925

Railway Surgery, a Specialty. E. T. Newell, Chattanooga.—p. 1.
Meddlesome Surgery. W. G. Kennon, Nashville.—p. 4.
Tryparsamide Treatment of Neurosyphilis. E. W. Cocke, Bolivar.—p. 7.
Ophthalmoscopic Examinations During Treatment with Tryparsamide. A. B. Dancy, Jackson.—p. 13.
Visceral Reflexes in Diagnosis. R. B. Wood, Knoxville.—p. 17.
Pneumothorax; Roentgenographically Considered. F. B. Bogart, Chattanooga.—p. 22.

Texas State Journal of Medicine, Fort Worth

21: 42-160 (June) 1925

Epitome of Organized Medicine; Purpose and Duty. M. F. Bledsoe, Port Arthur.—p. 51.
Medical Profession Needs More Publicity. J. E. Dildy, Brownwood.—p. 57.
Doctor's Wife as Citizen. Mrs. J. O. McReynolds, Dallas.—p. 60.

United States Naval Medical Bulletin, Washington, D. C.

23: 1-88 (July) 1925

Sinus Infections. C. B. Camerer.—p. 1.
Tuberculosis of Seminal Tract; Cases. E. M. Harris, Jr.—p. 10.
Epilepsy, Protein Sensitization Disease. L. H. Roddis.—p. 15.
What is a Normal Heart? Point of View of Medical Examiner. F. K. Soukup.—p. 18.
Leprosy at U. S. Naval Hospital, Great Lakes, Ill.; Case. P. Richmond, Jr.—p. 25.
Cerebral Abscess of Undetermined Etiology; Case. L. D. Carson.—p. 28.
Fractures of Head of Radius; Four Cases. W. S. Leavenworth.—p. 32.
Four-Point Method of Local Anesthesia for Hemorrhoidectomy. L. H. Williams.—p. 34.
Atypical Case of Serum Sickness. J. T. Boone.—p. 37.
Varicocele. J. L. Thornton.—p. 39.
Gold Ball Implantation After Removal of Eyeball. A. H. Cecha.—p. 40.
Case of Mumps with Cerebral Complications. F. D. Walker.—p. 42.
Mumps: Treatment. H. L. Fougerouase.—p. 43.

West Virginia Medical Journal, Huntington

20: 337-392 (July) 1925

Present Problem. G. D. Jeffers, Parksburg.—p. 337.
Problems of Gallbladder Disease Seen by Internists. J. Phillips, Cleveland.—p. 343.
Ethical Silence vs. Rational Publicity as Common Sense Medical Policy. J. R. Schultz, Charleston.—p. 349.
Puerperal Eclampsia. A. G. Rutherford, Welch.—p. 355.
Hypercalcium Saturation Therapy of Tuberculosis. C. H. Hall, Elkins.—p. 363.
Ethylene in Poor Risk Cases. J. E. Cannaday, Wheeling.—p. 371.

Wisconsin Medical Journal, Milwaukee

24: 57-115 (July) 1925

Suggested Analogy Between Hyperthyroidism and Gastric Ulcer. G. W. Crile, Cleveland.—p. 57.
Gastric and Duodenal Ulcers. E. S. Judd, Rochester, Minn.—p. 60.
Fistulae of Bladder. C. G. Richards, Kenosha, Ill.—p. 63.
Ureteral Stricture. E. A. Fletcher, W. M. Kearns and W. A. Leibeler, Milwaukee.—p. 66.
Value of Pyelogram. J. C. Sargent, Milwaukee.—p. 74.
Double Kidney with Calculi; Case. C. E. Smith and H. E. Kasten, Beloit.—p. 90.
Value of Public Health Nursing and Factors that Determine Its Value. C. A. Evans, Madison.—p. 91.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

2: 1-46 (July 4) 1925

*Experiments on Cancer Producing Substances. E. L. Kennaway.—p. 1.
*New Flocculation Reaction for Serodiagnosis of Malignant Disease. H. J. B. Fry.—p. 4.
*Focal Sepsis as Cause of Neurasthenia and Insanity. P. Watson-Williams.—p. 9.
Aural Focal Sepsis as Source of Neurasthenia and Insanity. E. Watson-Williams.—p. 10.
*Focal Sepsis as Factor in Causation of Neurasthenia and Insanity. J. A. Nixon.—p. 11.
Focal Sepsis of Dental Origin Causing Mental Impairment. W. R. Ackland.—p. 12.
Disease of Anterior Ethmoid Cells as Cause of Optic and Retrobulbar Neuritis. J. A. Gibb.—p. 12.
*Arthritis Deformans. L. S. Ashcroft, L. Cunningham, T. P. McMurray and H. S. Pemberton.—p. 13.

Cancer Producing Substances.—Further experiments on the formation by heat of cancer producing materials are described by Kennaway. The nine products tested were obtained from the following sources at, approximately, the temperatures stated: acetylene (700, 800 and 900 C.); California petroleum (800 C.); isoprene (700 C.); Durham Holmside coal (450, 560 and 1,250 C.); human skin (290 C.); yeast (290 C.). It is stated that the pyrogenous materials derived from acetylene, isoprene, petroleum, yeast and skin produce cancer simply because they are all "irritants"; and that the multiplication in the laboratory of instances of "chronic irritation" is not required. To apply this to a substance, after it has been shown to produce cancer, the term "irritant" gives an appearance of explanation which is illusory. There seems to be a tendency at present to state that a substance such as soot gives rise to a cancer because it is an irritant, and at the same time tacitly to regard it simply as an irritant because it gives rise to cancer; this circular treatment of the matter is of no value at all. The irritation which causes the growth of cancer must be a special kind or must act on some special element in the tissues. No invariable relation has been found between the temperatures at which these various materials are formed and their comparative activity in producing tumors. Thus the three tars made from coal at 450 C., 560 C. and 1,250 C. show an ascending order of potency; the 820 C. isoprene tar is more active than the 700 C. tar; and experiments still in progress indicate that the 920 C. tar will prove more effectual than the 780 C. tar. In all these cases the higher temperature gives the more active product. But, on the other hand, in the case of acetylene, a low temperature (700 C.) gives a product more active than that produced at from 800 to 900 C. The idea suggests itself that acetylene may be a decomposition product common to coal, mineral oils, yeast, skin and isoprene, and that the cancer producing material obtained from these very diverse sources is actually formed from acetylene by the synthetic process discovered by Berthelot. Probably the yield of cancer producing substance depends largely on catalytic reactions which cannot as yet be controlled.

Serodiagnosis of Malignant Disease.—Fry found that extracts of cancer tissue used as antigen in complement fixation experiments often showed marked anticomplementary properties. It seems possible that a method, in the nature of a colloidal flocculation reaction, which dispenses with the hemolytic system, might prove of value. In the endeavor to find a satisfactory antigen, more than 200 preliminary experiments were carried out by Fry with cancer serums, using different extracts of tumor tissue. None of these antigens nor various combinations of them proved consistently satisfactory. Eventually Fry worked out a method which has given very good results. Breast carcinoma tissue is the antigen used. By this method 500 serums have been examined, comprising malignant and nonmalignant conditions, and 75 per cent. correct results were obtained. In 239 cases of malignant disease, positive flocculations were obtained in 71 per cent. In 261 controls, comprising healthy individuals, cases of nonmalignant neoplasms, medical and surgical conditions, a negative result was obtained in 78 per cent. Healthy individuals gave a uniformly negative reaction, except in one instance. Nonmalignant tumors usually gave a negative reaction. With acute febrile conditions—for example, tuberculosis or sepsis—positive flocculations may occur.

Focal Sepsis as Cause of Neurasthenia and Insanity.—Watson-Williams calls attention to sepsis as often the essential cause of functional psychoses, ranging from slight blunting of intellectual activity, through the more definite forms of abnormal taciturnity, inability to concentrate, unsociability and the varying syndrome of psychic abnormality grouped under the terms "neurasthenia" and "hypochondriasis," to the graver manifestations of unsoundness of mind accompanied by suicidal impulse, delusional insanity, mania and ultimately dementia praecox. He also lays stress on the import of the fact that the sepsis is most frequently what is conveniently termed "focal" and "latent" or "cryptogenic."

Chronic Sepsis Causes Mental Disturbance.—Nixon reports four cases in which chronic septic absorption appears to be a definite factor in causing mental disturbance. He thinks it probable that most of the cases of puerperal mania are septic in origin.

Arthritis Deformans.—A routine investigation has been made by Ashcroft and others of more than fifty cases of arthritis deformans. The joints have been opened in a large proportion of cases, and from them an organism has been recovered which is identical in every case in its cultural and biochemical features. This organism does not correspond to any organism which has previously been described in association with this or any other disease. In only one case has it been recovered from the synovial fluid; in all the others it has been isolated from either the membrane or articular bone. No lesions have as yet been produced in animals; so far only the intravenous inoculation of rabbits has been attempted. Nothing constant has been isolated from foci of sepsis, feces, urine, blood, or fasting stomach contents. Routine examinations have been made of gastric secretion, basal metabolism, acid-base ratio, renal and hepatic efficiency, and of glucose tolerance. The outstanding features, so far, appear to be: the large proportion of cases showing achlorhydria or hypochlorhydria, the practically universal diminution of carbohydrate tolerance, and the relative absence of acidosis, renal or liver defects, or of changes in the basal metabolic rate. The only routine treatment employed has consisted in the use of large amounts of 0.4 per cent. hydrochloric acid and a carbohydrate-free diet, extending over a period of months. Improvement—first by diminution of pain and then by increase of mobility—has been obtained in practically every case, even without the removal of focal sepsis.

Indian Medical Gazette, Calcutta

60: 249-300 (June) 1925

*Abdominal Tuberculosis in Indian Practice. E. W. C. Bradfield.—p. 249.
Subperiosteal Excision of Joints. H. Hallilay.—p. 252.
*Disinfestation of Houses by Fumigation with Cresol. C. D. Tiwari.—p. 257.
Yaws (Frambesia) in Chin Hills. P. Bell.—p. 259.
Leper Island of Culion and Antileprosy Work in Philippine Islands. E. Muir.—p. 261.
Carrel's Treatment and Electrolytic Chlorin as Antiseptic. E. F. Neve.—p. 264.
*Treatment of Varicose Veins of Leg by Occlusion Method. D. R. Kshar.—p. 265.
*Diabetes and Insulin Treatment in Bengal. L. M. Ghosal.—p. 266.
Muscular Dystrophy, Pseudohypertrophic Type. J. B. Hance.—p. 270.
Vesical Calculus Formed Around an Inserted Foreign Body; Case. J. W. M. Nicholl.—p. 271.
Large Scrotal Hernia Operated on Under Apothesine Anesthesia. S. G. Chavan and J. P. Arland.—p. 272.
Ankylosis of Knee Joint Cured by Excision. U. N. R. Chaudhuri.—p. 273.
Treatment of Tropical Ulcer. J. F. James.—p. 274.
Importance of Entomology to India. T. B. Fletcher.—p. 276.
Insects, Their Relation to Diseases of Man, Animals and Plants. S. K. Sen.—p. 277.
Man, Anopheles and Malaria Parasite in Relation to Faunas. S. R. Christophers.—p. 279.

Abdominal Tuberculosis in India.—Bradfield states that tuberculosis among cattle appears to be unknown in the Madras Presidency, and although no bacteriologic investigations have been made, it is more than probable that this

absence of bovine tuberculosis influences the incidence and character of the disease in South India. Tuberculous diseases of bones and joints, though not so commonly seen as in European hospitals, pursues a much more intractable course and is less amenable to nonoperative forms of treatment. The economic problems of India and the ignorance of the people of the hospital class are contributory factors, but multiple lesions are more common and the surgical forms of tuberculosis are more frequently complicated by the presence of lesions in the lungs. Abdominal tuberculosis occurs in very much higher percentage than is found in European general hospitals. Among 205 hospital tuberculosis cases referred to, ninety-five were cases of abdominal tuberculosis. Surgical forms of tuberculosis constituted 2.1 per cent. of the total admissions.

Disinfestation by Fumigation with Cresol.—The method of disinfestation of houses for plague in vogue in the Punjab since 1915 is by vaporizing commercial cresol on smouldering cowdung cakes. An inquiry on the efficacy of this procedure was undertaken by Lal and Tiwari. To make the disinfestation by cresol effective they recommend the use of 10 ounces of cresol in an ordinary room of 1,000 cubic feet capacity. It is necessary to seal the room carefully before fumigation, and to keep it closed for four hours afterward. It is expedient to wash the floor with a disinfectant solution after the fumigation is over.

Treatment of Varicose Veins.—Kehar picks up the varicosed vein, along with the skin, from the underlying structures with forceps. Then a needle, threaded with strong No. 5 silk thread ligature, is passed underneath the vein and the ends of the thread are tied over it. In this way sutures are applied to the vein from above downward, the sutures being from one-half inch to three-quarters inch apart. The patient is then returned to bed. The veins begin to shrivel up in from seven to ten days and get completely shrivelled up in about three weeks. About ten days after the operation, alternate sutures, beginning at the second suture from the top, are removed and the rest in about three weeks. This method is said to be very useful in the treatment of varicose ulcers as the shrivelling up of the veins relieves the skin over them of their constant pressure and allows the establishment of free circulation of blood.

Value of Insulin Treatment of Diabetes in Bengal.—Not much benefit has accrued from insulin treatment of diabetes in Bengal. In many instances in Ghosal's experience and that of others, no benefit at all has been derived either in reducing blood sugar or urinary sugar even with strict dietetic and other regulations.

Indian Medical Record, Calcutta

45: 161-190 (June) 1925

Infected Ice-Cream. S. N. De.—p. 161.
Testes as Endocrine Organ in Ayurveda. A. Roy.—p. 162.

Medical Journal of Australia, Sydney

1: 582-612 (June 6) 1925

Cancer and Acquired Resistance to Tuberculosis. T. Cherry.—p. 582.
Hirschsprung's Disease; Cases. R. B. Wade.—p. 598.

1: 613-640 (June 13) 1925

Standardized and Progressive Surgery. H. B. Devine.—p. 613.
Relation of Neurasthenia and Anxiety Neurosis to Manic-Depressive Syndrome. J. MacPherson.—p. 618.
Intussusception Followed by Volvulus. J. H. W. Leadley.—p. 624.
*Sarcoma of Kidney. R. G. Craig.—p. 625.
*Malignant Disease of Kidney. J. S. Davis.—p. 625.

Sarcoma of Kidney in Child.—Craig reports a case of sarcoma of the kidney occurring in a child, aged 12 months. The tumor was easily palpable. A nephrectomy was performed. The child survived the operation and was alive and well at the time of this report made two weeks later.

Malignant Tumor of Kidney.—The tumor in Davis' case was removed from a child of 15 months. Its exact nature could not be determined. All kidney tissue had disappeared. The tissue elements and their arrangement suggested an epithelial origin of the tumor. It had no resemblance to a Grawitz or a Wilms' tumor.

Bruxelles-Médical, Brussels

5: 994-1022 (May 31) 1925

*Postencephalitic Parkinsonian Syndromes. P. Enderle.—p. 994.
Eye Disturbances with Gastro-Intestinal Disease. Van Lint.—p. 1002.
Surgical Treatment of Uterine Fibroma. L. Mayer.—p. 1005.

Postencephalitic Parkinsonian Syndromes.—Enderle describes his five cases in detail, summarizing the different treatments suggested by others. He states that sodium salicylate, given by mouth or by vein, has sometimes produced good immediate results. Certain patients improved under intraspinal injections of autoserum. Similar injections of encephalitic virus-vaccine sometimes seemed to check the further development, and even cause regression of the syndrome.

Bulletin de l'Académie de Médecine, Paris

93: 605-630 (June 2) 1925

Intentional Exposure to Measles. Armaingaud.—p. 607.
Prevention of Kleptomania. Antheaume.—p. 610.
Acridin Compound in Treatment of Gonorrhea. Jausion et al.—p. 618.
Physiology of the Middle Ear. A. Bonain.—p. 627.

93: 671-694 (June 16) 1925

Diastases and Vitamins in Wheat Hull. Pouchet.—p. 679.
*Vaccination Against Tuberculosis. A. Calmette et al.—p. 681.
Sanocrysin Treatment of Tuberculosis. L. Bernard.—p. 689.
*Dropsy from Thyroid Deficiency. J. C. Mussio Fournier.—p. 691.

Attempts to Ward Off Tuberculosis from Man and Animals.—Summarized on page beyond as published elsewhere.

Dropsy Syndrome from Thyroid Insufficiency.—Mussio Fournier observed four cases of attenuated myxedema with edema, ascites, and, in two instances, with hydrothorax. The patients were all women, aged from 25 to 44, without any organic affection to explain the extensive effusion. Thyroid treatment induced pronounced diuresis. The treatment, continued from two to five weeks, resulted in disappearance of the thyroid insufficiency and of the dropsy phenomena. This was noted also in one of the patients who presented albumin and casts in the urine. It is possible that a disturbed functioning of certain endocrine glands or of the vegetative system, connected with the thyroid deficiency, had induced the dropsy. The endocrine deficiency may in certain cases induce a veritable nephritis, as occurred in this one patient. It subsided under the thyroid treatment.

Bulletins de la Société Médicale des Hôpitaux, Paris

49: 885-907 (June 12) 1925

*Immunization with Diphtheria Anatoxin. L. Martin et al.—p. 885.
*Insulin Treatment of Leg Ulcers. Faure-Beaulieu and David.—p. 892.
The Pachon Oscillometer with Obliteration of Arteries. H. Vaquez et al.—p. 895.
*Treatment of General Paralysis. A. Marie.—p. 898.
Case of Kala-Azar in Adult. E. Burnet and F. Masselot.—p. 899.
*Trophic Action of Insulin. L. Ambard and F. Schmid.—p. 904.

Results of Vaccination with Diphtheria Anatoxin in Institutions.—Martin, Loiseau and Laffaille made 1,297 inoculations with diphtheria anatoxin mostly in schools and asylums. About 275 children, aged from 5 to 18, were vaccinated when no cases of diphtheria had occurred in the institution. Two injections (0.5 and 1 c.c.) were given at an interval of from fifteen to twenty-two days. The Schick test in 231 of these children, twenty-one to twenty-nine days after the second injection, elicited a negative reaction in 96.1 per cent. and a positive in 3.89 per cent. In another institution, after the occurrence of a case of diphtheria, 163 children were vaccinated twice with a sixteen day interval (0.5 and 1 c.c.) and the Schick test, applied twenty-three days afterward, was negative in 80 per cent., and positive in 19 per cent. After the third injection of anatoxin, given twenty-three days after the second, a positive Schick reaction still persisted in only one. With an established epidemic in which preventive treatment with diphtheria antitoxin had failed, the 45 children in the asylum were twice vaccinated with anatoxin (0.5 and 1 c.c. at twenty-one days interval). No cases of diphtheria developed afterward. In a school with endemic diphtheria, 35 children were given three injections, 14 two, and 24 one injection. A febrile reaction was noted in 2 cases (twelve hours); in 8 an extensive redness and pain in the injection area; in 11 only redness. The children seemed to

bear the injections well. A subsequent Schick test is not necessary for children, as with three injections immunization seems to be certain. The sensitiveness to the anatoxin is more pronounced in adults; therefore the vaccination should be made only in those adults with a positive Schick reaction. A fifteen days' and, if possible, a twenty-one days' interval between the injections is advisable.

Insulin in Treatment of Leg Ulcer.—Ten of Faure-Beaulieu and David's patients with leg ulcers presented hyperglycemia, while no sugar was detected in the urine. They were treated with insulin, at a dose of 10 units injected subcutaneously twice a day. In one case the total amount of insulin was 1,600 units; usually, about 500 units. One woman with an ulcer, 11 by 7 cm. in size, and glycemia of 2.12 gm., was cured in two months. She was given 480 units of insulin. A similar ulcer the year before took seven months to heal. Another woman with an ulcer, 7 by 9 cm. and glycemia of 2.41 gm. was completely cured in one month (320 units). One syphilitic woman had had a large and very painful ulcer for four years, rebellious to specific treatment. After two months' injections of insulin, the ulcer, 14 by 10 cm., was reduced by a half. The glycemia in this woman was 2.16 gm. per liter.

Relapsing Fever Treatment of General Paralysis.—Marie reports that in 120 patients with general paralysis treated with injections of tuberculin, milk or nucleinate, associated with bismuth, a remission occurred in 50 per cent. of the cases, persisting for three years to date. In the 100 submitted to malaria treatment, a remission was noted in 5 per cent., and improvement in 15 per cent. Inoculations of relapsing fever spirochetes, tried the last three months, induced remissions in nine out of fifteen patients. None of them have died since, while with the malaria treatment, the mortality was 15 per cent., and with the other fever-producing treatments from 8 to 10 per cent. The disease is not cured, but stabilized.

Effect of Local Application of Insulin on Ulcers of Non-diabetic Origin.—Ambard and Schmid describe a case in a woman, aged 67, with an apparently tuberculous skin lesion on one foot, which developed into a deep and large ulcer (20 by 20 cm.) of the infectious type. As various measures, used during five months did not prove successful, wet dressings with insulin were tried (12 units twice a day). No changes were noted the first twelve days; then granulations appeared, followed by complete healing in about ten days. In other cases small ulcers healed in a week, after other measures had failed. Only in one case out of fourteen the insulin was without results. In the beginning the insulin was given subcutaneously, afterward the wound was powdered with it. The action is ascribed to an exaggerated cellular activity of the tissues from stimulation of the carbohydrate metabolism.

Comptes Rendus de la Société de Biologie, Paris

92: 1409-1480 (May 29) 1925. Partial Index

*Sedimentation Speed and Cholesterolemia. Salomon et al.—p. 1410.
*Origin of Epinephrin. R. Arnold and P. Gley.—p. 1413.
*Action of Creatin on Epinephrin. R. Arnold and P. Gley.—p. 1415.
Formation of Gum by Bacteria. A. Fernbach et al.—p. 1418.
*Peptone and Phagocytosis. B. Erber.—p. 1422.
*Acid-Base Balance in Epilepsy. R. Rafflin.—p. 1429.
"Diphtheria Anatoxin." G. Ramon.—p. 1432.
Biology of Mumps Spirochete. Y. Kermorgant.—p. 1434.
Sodium Chlorid in Ion Interchanges. Mestrezat and Garreau.—p. 1439.
*Action of Bile on Bacteriophage. G. Calalb.—p. 1442.
*Shock in Gravid Rabbits. P. Simonin and L. Fernier.—p. 1447.
*Follicle Phase and the Suprarenals. J. Watrin.—p. 1451.
Blood Platelets in Scarlet Fever. O. T. Bonciu.—p. 1453.
*Tissue Ferments in Avitaminosis. S. and A. L. Draganesco.—p. 1470.
*Cinchophen in Jaundice. H. Slobosinno and P. Herscovici.—p. 1472.

Sedimentation Speed of Blood Corpuscles Does Not Depend on Cholesterolemia.—Salomon, de Potter and Valtis' research on fifty-nine subjects showed that in grave tuberculosis the amount of cholesterol in the blood is decreased, while sedimentation is accelerated. In normal persons, with a high cholesterol content, sedimentation is retarded; in pregnant women, the normal as well as the tuberculous, hypercholesterolemia is associated with an increased speed. Evidently acceleration of sedimentation is not connected with the cholesterol content in the blood.

Action of Certain Substances on Epinephrin Formation.—Arnold and Gley treated suprarenal tissue with tyrosin, phenylalanin, dioxyphenylalanin, tyramin and inosite. None of these substances seemed to influence the formation of epinephrin in the suprarenal capsules. Their ten experiments on rabbits demonstrated that the vasoconstrictor action of epinephrin may be sometimes enhanced by adding to it creatin or creatinin.

Influence of Peptone on Phagocytosis of Trypanosoma and Diphtheria Bacillus.—Erber introduced blood containing trypanosomes into the lymph of frogs, previously injected with peptone. Under the influence of the peptone, phagocytosis occurred more slowly, and the delay was the more pronounced, the larger the dose of the peptone. An identical phenomenon was observed with the diphtheria bacillus.

Rôle of Ammonia and Acidity in Epilepsy.—Rafflin's conclusion is that alkalosis may contribute to the onset of an epileptic seizure. Mere disturbance of the acid-base balance cannot be incriminated alone. Such disturbances occur often in the free intervals, without apparent harm.

Action of Bile on the Bacteriophage.—Calalb states that even a small quantity of ox bile inhibits the lysant property of the bacteriophage, without destroying it. This may explain the fact that in typhoid fever and in typhoid carriers the bacilli linger longest in the gallbladder.

Anaphylactic Shock in Gravid Rabbits.—Simonin and Fernier's observation showed that anaphylactic shock can be induced in a gravid rabbit, and that gestation does not modify either the character or the intensity of the shock. The latter may disturb the gestation, but does not seem to affect the young in the uterus.

Effect of Follicle Phase on Suprarenal Capsules.—Watrin injected the follicle fluid (liquor folliculi) from cows into the peritoneal cavity of guinea-pigs and rats under the puberty age. This was followed only by a minimum reaction in the suprarenal glands. Evidently the capsules do not respond to ovulation.

Ferments in Tissues of Pigeons with Vitamin Deficiency.—S. and A. L. Draganesco noted that neither the amylase in the extracts of organs, nor the trypsin of the pancreas was modified in a pigeon on a vitamin deficient diet. The amount of the ferments secreted was normal.

Cinchophen in Treatment of Jaundice in the New-Born.—Six infants were given daily 0.1 gm. of cinchophen with 2 gm. of sugar by mouth; six, the same dose without sugar; in three cases 0.1 gm. of cinchophen was used twice a day in an enema. Observation during the first twelve days showed that cinchophen with sugar constantly reduced the content of bilirubin in the blood. Cinchophen without sugar was often vomited, and therefore without effect. Given in an enema, it did not remain long enough, and thus the results were insignificant.

Journal de Médecine de Lyon

6: 287-312 (May 20) 1925

*Autohemotherapy in Chancroid Buboes. Nicolas and Lacassagne.—p. 287.
*Colitis Due to Arsphenamin Poisoning. Bonnet and Bouvier.—p. 295.
*Diagnostic Value of Giant Cells in Syphilis. Favre and Manhès.—p. 299.
Test Treatment for Syphilis. G. Massia and M. Pillon.—p. 303.

Own Blood Treatment for Chancroid Adenitis.—In eleven of Nicolas and Lacassagne's fourteen cases the inflammation of the lymph glands subsided under the treatment. The pain was relieved after each injection, sometimes in fifteen minutes, usually within several hours. A simultaneous reduction of the inflammation occurred, also resorption of pus in the suppurated glands. Five or six injections were needed; in one case three injections brought about complete recovery. The 5 c.c. of blood withdrawn was immediately injected in the muscles of the thigh in the first injection; 10 c.c. was used in the successive injections, given at two or four day intervals. The treatment succeeded in chancroid adenitis of staphylococcic origin; it failed in that caused by Ducrey's bacillus itself. It is probable that the autohemotherapy acts by inducing a hemoclastic shock.

Ulcerous Colitis from Neo-Arsphenamin.—In Bonnet's patient, a syphilitic woman, aged 31, the phenomena appeared after the fourth injection of the third series. Two previous series of neo-arsphenamin injections, given within five years, had been well tolerated by the patient. Death occurred two months after the last injection. Necropsy revealed extensive ulcerative colitis with perforations and purulent peritonitis, undoubtedly the result of toxic action from the arsenical.

Syphilis of the Face.—Favre and Manhès observed a syphilitic affection of the face, presenting an extremely hard infiltrate of lymphodermia type. Histologic examination showed epithelioid and giant cells in the tissue, suggesting the diagnosis of tuberculosis. Seroreactions and tentative specific treatment established the existence of syphilis. They point to the fact that the presence of giant cells has no positive diagnostic value.

Journal d'Urologie Médicale et Chirurgicale, Paris

19: 377-472 (May) 1925

Treatment of Impermeable Urethra Stricture. P. Bazy.—p. 377.
Diagnosis of Latent Gonococcus Infection. Noguès and Durupt.—p. 379.
Prostatectomy by Both Hypogastric and Perineal Routes. X. Delore et al.—p. 398.
Intravesical Prolapse of Ureter. O. Mercier.—p. 402.
Pseudogonococcus Urethritis. M. Moran.—p. 428.
Metal Laveur-Irrigator. L. Boulanger.—p. 432.
Catheter with Flexible Metal in Wall. L. Boulanger.—p. 437.

Néoplasmes, Paris

3: 193-240 (Oct.) 1924

*Deep Roentgen-Ray Treatment of Myxoma. G. Bolognesi.—p. 193.
*Metastasis in Pleura and Lung of Cancer of Breast. Delbet.—p. 202.
The Serum After Deep Roentgen Treatment. Roffo and Correa.—p. 211.
Influence of Ions on Respiration of Cells. A. H. Roffo and S. M. Neuschloss.—p. 225.
*Sarcoma in Fish. A. H. Roffo.—p. 231.

Deep Radiotherapy for Myxomas.—Bolognesi's patient had had several recurrences of the tumor of the pure myxoma type. Then the recurrence was given a course of deep radiotherapy, which aggravated conditions, and sarcomatous degeneration followed.

Recurrence in Lung or Pleura After Mammectomy for Cancer.—Delbet has had this occur in a third of his nine known instances of recurrence in 115 operative cases of cancer of the breast. The recurrences in pleura or lung often develop rapidly, regardless of the structure of the tumor. He seeks now to avoid this new complication of mammary cancer by inducing a profuse serous discharge by introducing several layers of gauze between the skin flaps and the deep wall of the wound, after removal in one mass of the breast and connected glands. He supplements this with deep roentgen exposures, but applies the rays only tangentially, not allowing them to act directly on lungs or pleura.

Sarcomas in Fishes.—Roffo describes a peculiar spindle-cell sarcoma found in a fish, *Carassius auratus*. Seven of the twenty fish in the tank became affected in turn. The diseased fish were removed and the tank disinfected, after which no tumors developed.

Nourrisson, Paris

13: 141-220 (May) 1925

Congenital Debility. A. B. Marfan.—p. 141.
Feeding in Infectious Diseases of Infants. L. Ribadeau-Dumas and Fouêt.—p. 156.
Lactation and Glycemia. Banu and Heresco.—p. 166.
*Benzoin Reaction in Young Children. P. J. Ménard.—p. 171.
Blood Transfusion in Infants. J. Debray.—p. 184.

The Benzoin Reaction in Young Children.—Out of seventy-six children with congenital syphilis or other disease of the central nervous system, the benzoin test of the cerebrospinal fluid agreed with the Wassermann test in 94.7 per cent.; in four the test was positive while the Wassermann reaction was negative. In affections of uncertain syphilitic origin as, for instance, essential convulsions or hydrocephalus, the benzoin test was constantly negative in epidemic encephalitis, and positive in tuberculous meningitis. Ménard believes that the reaction may be preferred to the Wassermann test, since it is simple and rapid, and lumbar puncture is relatively easy and harmless in children.

Paris Médical

55: 573-588 (June 27) 1925

*Etiology of Epidemic Encephalitis and Herpes. C. Levaditi.—p. 573.
*Incubation in Meningococcus Sepsis. P. Fontanel.—p. 587.

Common Origin of Epidemic Encephalitis and Herpes.—Levaditi points to the experiments on monkeys and rabbits confirming that the herpes-causing virus and that of epidemic encephalitis belong to the same group. The more frequent occurrence of herpes is explained by the fact that the skin, as well as the mucous membranes and cornea present a higher receptivity to the virus than the cerebrospinal axis. The virus may invade the nervous system at a time when its natural and hereditary immunity is at a low ebb, especially from intestinal infections. Another factor in the localization may be the contamination by a species of the virus having a special affinity for the nervous tissue.

Incubation Stage in Meningococcemia.—Fontanel thinks that the infection may take place by the nasopharynx or by the intestine and their corresponding lymph vessels. The cocci may grow in the organs and subsequently pass into the blood at one time or at intervals, thus causing the fulminating or the intermittent forms of meningococcemia. The digestive tract may remain intact since the cocci are carried off with the mucus, refractory to the ferments. Therefore, according to Besredka's theory and practice in preventive local vaccination, not only the cells of the pharyngeal mucosa should be considered, but also the intestinal cells.

Presse Médicale, Paris

33: 825-840 (June 20) 1925

*Preventive Vaccination Against Tuberculosis. Calmette et al.—p. 825.
*Differentiation of Splenic Anemias. C. Aubertin.—p. 826.
*Vaccine and Serotherapy in Bronchopneumonia. A. Dufourt.—p. 829.

Vaccination Against Tuberculous Infection.—Calmette and his co-workers summarize the results from their BCG bacillus vaccine. Within thirteen years 230 successive cultures of a virulent strain of bovine tubercle bacilli had been made in an alkaline medium with ox bile. Thus the bacilli were deprived of their tubercle-producing property, but they still preserved the toxicity for the tuberculous organism, and they secrete a tuberculin which induces production of antibodies the same as ordinary bacilli. Among the 423 newly born vaccinated with it, more than six months ago, 32.6 per cent. were left exposed to contamination (tuberculous mother in eighty-six cases). None of those vaccinated in 1922 have died, and only 0.5 per cent. among those vaccinated in 1924 have died from presumed tuberculosis. This vaccination has proved entirely harmless for all the infants vaccinated more than three years ago, and, at least for the protection of young infants, its efficacy seems well established, both clinically and experimentally. (One of their previous communications was summarized Aug. 9, 1924, p. 411.)

Indications for Splenectomy in Anemia.—Aubertin maintains that in splenomegaly with leukocytosis and intense myeloid reaction, splenectomy is contraindicated, as also in myeloid leukemia. The operation is advisable in splenomegaly with leukopenia and mononucleosis, since it exerts a favorable action, and sometimes a definite one on the anemia. This may be observed in Banti's disease, also in hemolytic splenic anemia and malaria splenic anemia.

Vaccine and Serum Treatment in Bronchopneumonia of Children.—Dufourt's research on 100 cases demonstrated that the disease is usually caused by the pneumococcus and enterococcus, frequently associated. The streptococcus was found in one or two out of ten cases, and almost always in secondary bronchopneumonia. He used a vaccine containing the pneumococcus, enterococcus, staphylococcus and the tetragenus. The vaccine was used alone in 80 per cent. of all the cases. A dose of 0.25 or 0.50 c.c. was injected the first day in infants and young children; the second day 0.33 c.c. or 0.50 c.c.; the third 0.5 or 1 c.c. Daily injections of 1 c.c. were continued until fever and grave functional signs subsided. In older children and in adults a double dose was given. An improvement of local and general phenomena occurred after three or four injections. If five or six vaccine injections failed, then antistreptococcic serum was tried in

a dose of 30 c.c. in infants and 60 c.c. in children. In bronchopneumonia caused by streptococci, improvement under the serum appeared the third day; the injections were repeated daily, until definite disappearance of the infection.

33: 841-856 (June 24) 1925

*Roentgen Rays in Gastric Disease. R. Bensaude et al.—p. 841.
The Acid-Base Balance. III. F. Coste.—p. 844.

Roentgen-Ray Treatment in Gastric Affections of Noncancerous Origin.—Under the influence of the rays, Bensaude, Solomon and Oury noted a considerable decrease of the acidity in 55 per cent. of their eleven patients; a slight decrease in 25 per cent.; in 20 per cent. the acidity did not change. This occurred after from eleven to sixteen exposures, rarely after from three to seven. A dose of 2.5 H units was used in one exposure, given once or twice a week. Reduction of the pepsin was slower than that of the acidity. Obviously, the roentgen-ray treatment proves most successful in cases of hyperpepsia with hyperchlorhydria. The effect of the roentgen rays persisted for several weeks, and the treatment was repeated after several weeks or months. In 44 per cent. of the cases the rays did not relieve the gastric pains; in 21 per cent. a partial amelioration was noted; in 35 per cent. there was considerable improvement. This occurred after ten to fourteen exposures; rarely after six or seven. The roentgen ray evidently exerted an action on the motor function of the stomach, since pyloric spasm subsided completely. The treatment seemed to relieve in particular the pains following gastro-enterostomy. Four irradiations induced a rapid and definite disappearance of the postsurgical pains in their one personal case.

Progrès Médical, Paris

786-856 (May 30) 1925

*Infectious Nature of Multiple Sclerosis. T. Alajouanine.—p. 794.
Antishock Treatment in Psychoses. H. Claude et al.—p. 796.
Influence of Charcot on Freud. H. Codet and R. Laforgue.—p. 801.
Fate of Iodized Oil in Cerebrospinal Fluid. J. Forestier.—p. 802.
Cases of Osteitis Fibrosa Cystica. Léri and Ruppe.—p. 808.
*Syphilis of Corpus Striatum. J. Lhermitte.—p. 817.
Compensation in Mental Debility. P. Merklen.—p. 825.
Multiple Sclerosis and Syphilis. A. Sézary.—p. 829.
Intracranial Hypertension. Vincent and de Martel.—p. 835.

Infectious Origin of Multiple Sclerosis.—In Alajouanine's case, in a woman, aged 30, the disease started with signs of an acute infection, resembling epidemic encephalitis. It developed, after two months, into multiple sclerosis, with subsequent ascending myelitis, followed by death from bulbar phenomena. There was no meningeal reaction and no visceral lesions. The indications are for intramuscular or intravenous injections of sodium salicylate, quinin, or other drugs to combat the assumed infectious cause of the disease.

Syndrome from Syphilis of Corpus Striatum.—Lhermitte reports a case of typical parkinsonian syndrome, and a case resembling paralysis agitans, caused by localization of the syphilitic virus in the corpus striatum. Involvement of certain parts of the striate body may induce a pseudobulbar syndrome, or the rigidity syndrome in arteriosclerosis. He calls this pathologic group primary syphilitic striatitis.

Revue de Chirurgie, Paris

63: 321-404 (May) 1925

Chronic Nontuberculous Hip Joint Disease in Adults. Duguet and Clavelin.—p. 321.
Treatment of Chronic Intestinal Stasis. Dunet and Peycelon.—p. 373.

Revue Française d'Endocrinologie, Paris

3: 89-144 (April) 1925

Rôle of Nervous System in Metabolism. A. Oswald.—p. 89.
Ovarian Hormones. R. Courrier.—p. 94.
The Cortex of the Suprarenal Gland. R. Porak.—p. 102.
Relation Between Asthma and Ovarian Disturbances. F. Claude and H. Saleur.—p. 115.
Action of Pituitary on Metabolism. D. M. Rossiysky.—p. 124.

Revue de Médecine, Paris

42: 161-240, 1925

Surgical Indications with Chronic Intestinal Stasis. G. Lardennois.—p. 161.
*Subacute Venous Septicemia. C. Legrand.—p. 169.
Relations Between Hemoglobinuria, Hematuria, Purpura and Jaundice in First Invasion of Malaria. Trabaud.—p. 179.

Subacute Venous Septicemia.—The special features of this tenacious affection are the primary and persistent localization in the venous system, and the spread throughout the organism of the relatively benign process. In the case described it seems to have died out, after a fifteen months' course, but the contractures, atrophy and disability still persist to some extent, a year later, in the lower part of the body; the arms have quite recuperated. Sedatives to act on the sympathetic system and opium for the convulsions proved useful, but the greatest benefit on the heart complications, and even on the venous process, was derived from treatment of the digestive tract (calomel, castor oil, lavage of the bowels). There were from five to ten waves of exacerbation in the cases on record and the duration ranged from four to fifteen months or even three years in L. Blum's case. Pains in the legs of the woman of 45, in the case reported, were the first symptoms, and a little edema at the ankles. Then the axillae became painful, and other symptoms developed indicating irritation of the sympathetic and of the nervous system in the neck and head, with transient involvement of some lung veins, with slight hemoptysis once. It seems wise to wait for twenty days after subsidence of the pain and fever in a region before attempting gentle mobilization—regardless of conditions elsewhere. Legrand did not succeed in cultivating germs from the blood. Endocrine derangement and insufficiency of liver and kidneys may be predisposing factors, but the whole clinical picture suggests an analogy in the veins of endocarditis lenta in the heart.

Schweizerische medizinische Wochenschrift, Basel

55: 529-548 (June 4) 1925

*Diagnosis of Scarlet Fever. G. Fanconi.—p. 529.
*Diet in Gastric Ulcer. A. Jarotzky.—p. 535.
*Blood Changes After Injection of Emanation. Kotzareff.—p. 537.
*Treatment in High Altitudes. J. H. Hirschfeld.—p. 540.

Diagnosis of Scarlet Fever.—Fanconi failed in his attempts to obtain a specific reaction with intracutaneous injections of streptococcus suspensions, but confirms the usefulness of the Dick test. He believes with Szontagh that scarlet fever is an anaphylactic reaction to various agents.

Diet in Gastric Ulcer.—Jarotzky reprints his diet published in 1910, and based on physiologic experiments. The white of egg, if given without salt, produces no gastric secretion. He adds at another time of the day unsalted butter. The patient has to stay in bed and is given increasing doses of white of eggs (from 1 to 10) in the morning and of butter (20-180 gm.) in the afternoon. No fluids or salt are allowed. After ten days, gruels without salt are added.

Blood Changes After Injection of Emanation.—Kotzareff describes the changes of the formed and fluid elements of the blood in rabbits and guinea-pigs. An intracutaneous injection of even 16.5 millicuries produced no grave lesions. Only sterility lasting ten months and followed by abortion was noted.

Treatment in High Altitudes.—Hirschfeld attributes to the low tension of oxygen the most important therapeutic action of high altitudes. He advises to add gymnastics to increase its value.

Archivio Italiano di Chirurgia, Bologna

11: 229-332 (April) 1925

Primary Epithelioma of the Submaxillary Gland. Agrifoglio.—p. 229.
Muscle and Fat Transplants in Wounds of the Lungs. C. Rossi.—p. 245.
*Surgical Treatment of Syphilis of Stomach. A. Pollidori.—p. 273.
Hernia of the Appendix. G. Carisi.—p. 283.

Surgical Treatment of Syphilis of the Stomach.—Pollidori describes a case in which three years of treatment for the syphilis had not modified the gastric lesions to any extent. Gastro-enterostomy relieved the digestive disturbances, and on renewed specific treatment all disturbances subsided and the patient has been in good health during the year or more since. No attempt was made to remove the infiltrated portions of the stomach wall. He compares with this case the similar ones on record. In 1907, Pater had compiled 122 cases of syphilis of the stomach, and Meyers added fifty-eight more in 1912.

Pediatria, Naples

33: 505-560 (May 15) 1925

*Fetal Endocarditis. I. Nasso.—p. 505.
*Diplococcus Affections of Children. E. M. Mondini.—p. 518.
Pediatric Cases. Sindoni and Guccione.—p. 525.
Insulin and Diabetes in Children. R. Pollitzer.—p. 533.

Fetal Endocarditis.—Nasso reports a case of true fetal endocarditis. The condition cannot be differentiated from a malformation of the heart except by necropsy.

Vaccine Treatment in Diplococcus Affections of Children.—Mondini injected daily or every other day a diplococcus vaccine in children suffering from bronchopneumonia or pneumonia. He started with 0.1-0.2 c.c. of a vaccine containing 5 mg. per cubic centimeter when injected intravenously, or with 0.5 c.c. intramuscularly. He repeated the injection daily or every other day according to the reaction of the patient. The mortality in infants less than 1 year of age was only 12 per cent. He also reports good results in empyema and in diplococcus pneumonia complicating whooping cough.

33: 617-680 (June 15) 1925

*Schick Test in New-Born and Mother. Ronchi and Redlich.—p. 617.
Nonspecific Skin Test Reactions. R. Kharina-Marinucci.—p. 627.
Magnesium Sulphate in Tetany. A. Emmanuele.—p. 632.
Biologic Diagnosis of Tuberculosis. I. Nasso.—p. 642.
Some Pediatric Cases. Sindoni and Guccione.—p. 648.
Auxiliary Symptoms of Scarlet Fever. L. Sabatini.—p. 656.

Schick Test in New-Born and Mother.—Ronchi and Redlich observed eighty-six negative Schick reactions in 100 newborn children. Ten out of thirteen infants who had not been nursed yet were also negative. Two infants had a slight pseudo-reaction.

Policlinico, Rome

32: 731-765 (May 25) 1925

Respiratory Insufficiency. R. Monteleone.—p. 731.
Goiter in Erythrea. E. Bussa-Lay.—p. 735.

32: 767-797 (June 1) 1925

*Intracutaneous Reaction in Malta Fever. E. Trenti.—p. 767.
Hydatid Cyst in Retrovesical Space. L. Cevario.—p. 770.
Syphilis from Accidents of Work. S. Diez.—p. 775.

Intracutaneous Reaction in Malta Fever.—Trenti found the intracutaneous reaction valuable in diagnosis of Malta fever. It is not entirely parallel with the agglutination test. Both methods should be used.

32: 799-829 (June 8) 1925

The Kielland Forceps. R. Bompiani.—p. 799.
*Castellani's Bronchospirochetosis. Notarangeli and Tempesta.—p. 804.

Castellani's Bronchospirochetosis.—Notarangeli and Tempesta's patient had a hemorrhagic fetid sputum, pains in the chest, slight fever and râles at the base of the lungs. No tubercle bacilli were found, but Castellani's spirochetes were present in the sputum. The patient was treated with tartar emetic and recovered.

32: 831-865 (June 15) 1925

Fractioned Aspiration of Stomach Contents. Alzona.—p. 831.
Neoplastic Form of Retraction of Mesentery. Chiasserini and Antognoli.—p. 836.
*Vaccine Prevention of Scarlet Fever. G. de Toni.—p. 840.

Vaccine Prevention of Scarlet Fever.—de Toni used Caronia's vaccine in forty-one children in a hospital after one case of scarlet fever had been diagnosed in a patient. No further infections occurred.

32: 933-967 (July 6) 1925

*Nephropyelitis. D. Taddei.—p. 933.
*Camphor Eruptions. R. Lambri.—p. 941.
Serodiagnosis of Typhoid. V. Vanni.—p. 942.
The Life Work of G. B. Grassi. M. Sella.—p. 943.

Nephropyelitis.—Taddei has coined this term to designate a blood-borne inflammatory process of the kidney cortex with multiple foci, possibly spreading to involve the pelvis, ureter and bladder, but without abscess formation. There does not seem to be any tendency to spontaneous recovery, although there are comparatively quiescent periods in the acute or subacute course. His five patients were women, and two cases are described in detail. He thinks that a chronic painful or hematuric form of this nephropyelitis has been labeled hitherto "essential nephralgia or hematuria." There is no need for catheterization of the ureter in this nephropyelitis, and decapsulation of the kidney would give only temporary relief. The cure was rapid and complete in his three partial resection cases; in the other two the kidney was removed. He considers nephrotomy and nephrostomy futile and dangerous in these cases.

Camphor Eruptions.—Lambri reports a case of an itching urticaria after injections of camphorated oil in an adult, and a case in a child of an eruption, resembling scarlet fever, in pneumonia treated with camphor. Another child with grave debility from gastro-enteritis, given injections of camphor in ether, developed an eruption likewise, which subsided when the camphor was dropped.

32: 265-316 (June 1) 1925. Medical Section

*Convalescents' Serum in Scarlet Fever. T. Pontano.—p. 265.
Meinicke's Turbidity Reaction. Rocco.—p. 292.
*Enzyme Reaction and Ring Test. Biasiotti and Mars.—p. 303.
*The Weil-Kafka Reaction in Injuries of Head and Spine. S. Caccuri.—p. 309.

Convalescents' Serum in Treatment of Scarlet Fever.—Pontano had equally good results in treatment of scarlet fever with injection of serum from convalescents or healthy persons or horses, when the serum was injected intravenously. He believes that it is essentially a stimulation therapy.

Clinical Value of Enzyme Reaction and of Ring Test.—Biasiotti and Mars describe the technic of the reaction except the preparation of the antigen. They call the contact test with disintegrated tissues the symphoreaction (sinforeazione). The enzyme reaction determines the disease (tuberculosis), while the contact test is used to determine the diseased organ.

The Weil-Kafka Reaction in Injuries of Head and Spine.—Caccuri obtained a positive hemolysin reaction even late after the injury (five months) while the Pándy and the Nonne-Appelt tests were negative.

Riforma Medica, Naples

41: 337-360 (April 13) 1925

Actinomycosis of the Skin; One Case. M. Truffi.—p. 337.
*Vibratory Auscultation. A. Roccavilla.—p. 339.
Study of Wassermann's Tuberculosis Antigen. E. Mariotti.—p. 341.
Alizarin Test in Diagnosis of Tuberculosis. G. Capuani.—p. 345.
Phonogammoscope for the Singing Voice. A. Della Cioppa.—p. 347.
Tuberculosis of Female Internal Genitals.—p. 349.

Vibratory Auscultation.—Roccavilla applies this term to describe his method of auscultation of a tuning fork through the chest. He uses an ordinary stethoscope and a tuning fork 27 cm. long, and expatiates on the instructive findings, both direct and indirect.

Rivista di Clinica Pediatrica, Florence

33: 361-432 (June) 1925

*Trophic Changes and Desquamative Erythrodermia. Malossi.—p. 361.
Sarcoma of Renal Region with Spinal Syndrome. D. Moggi.—p. 376.
Active Immunization Against Diphtheria. I. Tomassini.—p. 384.

Trophic Changes and Desquamative Erythrodermia.—Malossi regards Leiner's disease as a manifestation of the exudative diathesis. Various trophic lesions (ulcers, necrosis, keratomalacia) may occur with it on the same basis.

Anales de la Facultad de Medicina, Montevideo

10: 1-82 (Jan.) 1925

The Normal Histology of Peripheral Nerves. A. Schroeder.—p. 1.
*Access Through Both Thorax and Abdomen. C. V. Nario.—p. 19.
*Buried Rubber Tube in the Biliary Passages. F. Ruvertoni.—p. 36.
Intestinal Invagination. R. M. Del Campo.—p. 49.

Advantages of Thoracolaparotomy.—By access through both the thorax and the abdomen to lesions in the subphrenic space and adjoining regions, we solve a number of problems which invariably present themselves. Nario always resects the tenth rib and sometimes the ninth and the eighth, exceptionally the eleventh and seventh. It is indicated when the primary incision proves inadequate, or the nature and complications of the lesion require more ample access, as in three cases reported of hydatid cysts of the liver, a transdiaphragmatic fistula or a pyonephrosis with fistula. He

gives an illustration of the latter case with its enormous ulceration of the anterior wall of the abdomen.

Prosthesis of the Common Bile Duct.—Ruvertoni extols the benefit from reconstructing the biliary passage by means of a buried rubber tube, as Terrier suggested in 1907 but without practical results in his own case. He has collected from the literature forty cases of reconstruction of the biliary passages by this means, including fourteen in which the drain was removed later, and twenty-six in which the tube was left in the tissues. The results show the advantages of leaving the tube; in only one case was there an inflammatory reaction, and in two the tube was expelled spontaneously.

10: 83-192 (Feb.) 1925

*Typhoid in Children. L. Morquio and J. Bonaba.—p. 83.
*Splanchnic Anesthesia. J. M. Silva.—p. 140.
*Hydatid Cysts of the Lung. D. Prat.—p. 161.
Factors in the Digestive Disturbances in Infants. S. E. Burghi.—p. 172.

Typhoid Fever in Children.—During the fifteen years since the children's clinic at the Pereira-Rossell hospital has been in operation, there have been treated 1,440 cases of typhoid fever. The majority were of water-borne origin from drinking contaminated water. The cases do not originate in Montevideo but in the suburbs or other places where there are no sewers or safe drinking water. Less than 20 per cent. of the cases were acquired in the city. Typhoid is not endemic in Uruguay, but usually begins in the summer, reaches its height in the fall and subsides in the winter. The cases observed included infants and children up to the age of 17. Only thirty-four of the children were less than 3 and five over 15. Nearly all were in an advanced stage when they entered the hospital. There were 130 deaths, that is, 9 per cent. The duration of the disease ranged from one week to more than three months. A group of seventy-seven of the children were treated with an iodized vaccine, but it did not seem to modify the disease in the least.

Splanchnic Anesthesia.—Silva found this method of blocking the splanchnic nerves both simple and easy. He has applied it in twenty-eight abdominal operations, with complete success in all but three cases of cholecystectomy. The operations included gastrectomy for cancer or ulcer, cholecystoduodenostomy, removal of hydatid cysts and other laparotomies.

Curative Vomica in Hydatid Cyst of the Lungs.—Prat warns not to rely too much on the possibility of a spontaneous cure of hydatid cyst of the lung by a vomica. This occurred only twice in his own series of twenty-nine cases before 1921, and in none of his second series of fourteen cases since 1921.

Anales de la Sociedad Méd.-Quir. del Guayas, Guayaquil

16: 70-106 (May) 1925

*Treatment of Gonococcus Urethritis. M. A. Jijón.—p. 95.
Roentgen Treatment of Rebellious Cough. F. López.—p. 104.

Vaccine Therapy Plus Parenteral Injection of Milk in Treatment of Gonococcus Urethritis.—Jijón advises to supplement the usual local treatment with vaccines and injections of milk. There is usually a pronounced reaction with chill and fever after the injection. In his eighty cases seventy-four, that is, 92.5 per cent., were cured in an average of twenty-four days. In two cases there was a protein shock, which yielded to subcutaneous injections of epinephrin.

Archivos Esp. de Enf. del Aparato Digestivo, Madrid

8: 321-384 (June) 1925

Misleading Displacement of Organs in Estimation of Pain on Palpation of the Abdomen. L. Pron.—p. 321.
Treatment of Gastric and Duodenal Ulcer. S. Carro.—p. 328.
Syphilitic Disease of the Intestine Plus Amebiasis and Hookworm. Cobián.—p. 332.
*Multiple Gallstones. A. Catalina.—p. 336.

A Misleading Gallstone History.—A woman, aged 50, who had been pregnant seventeen times, for the last thirty years had suffered from intermittent pains in the stomach, after eating. She had had hemorrhage from the stomach on thirteen occasions, the last twenty years before; since then there had been occasional bitter eructations. She was relieved by a milk diet, bismuth and alkalies. As the last attack did not yield to bismuth, an operation was found necessary. The stomach and the duodenum were found normal, but the gallbladder contained 3,760 gallstones. They were clumped together and retained the shape of the gallbladder after it had been opened. The case teaches anew the importance of symptoms of gastric dyspepsia in gallstone disease.

Archivos Españoles de Pediatría, Madrid

9: 257-320 (May) 1925

*Congenital Myatonia. S. Cavengt.—p. 257.
*Mastoid Disease Secondary to Diphtheria. A. Martín Calderín—p. 275.
*General Diagnosis in Pediatrics. L. Morquio.—p. 280.

Congenital Myatonia.—Cavengt reports three cases to demonstrate that Oppenheim's disease and the motor disturbances described by Werding-Hoffmann form a single morbid entity, characterized by its congenital origin, its frequently familial occurrence, its primary atony and the atrophic muscular paralysis, combined with the almost invariable fatal termination.

Diphtheric Mastoiditis.—Martín Calderín reports a case of pseudomembranous osteitis of the mastoid gland in a boy aged 3, secondary to a diphtheric process in the pharynx. He adds that Garfiels-Dwyer in 170 cases of mastoiditis encountered the diphtheria bacillus only once. Scalas has met but one case.

General Diagnosis in Pediatrics.—Morquio remarks that all diseases in children can be divided into three classes: those peculiar to children; those which occur also in adults but have a special character in children, and those common to both. In the first group the congenital and hereditary factor is of capital importance. This group includes melena, sepsis, hematoma in the brain, and birth paralysis. In the infantile pathology of the second group, the soil plays an important rôle, particularly the susceptibility of the nerve centers. In the third group the soil and heredity predominate, but also periodicity, epidemiology and contagion. In children we must watch out for diseases before they have really revealed themselves by any symptoms, or only slight ones.

Archiv für Kinderheilkunde, Stuttgart

76: 81-160 (June 16) 1925

Case of True Dwarf Growth. H. Rosenthal.—p. 81.
*Dose of Atropin for an Infant. F. Ritte.—p. 88.
Tuberculosis in Relation to Housing Problem. Sickinger.—p. 94. Conc'n.
*Dysergy in Wake of Infectious Diseases in Infants. K. Haymann.—p. 98.
*Pyuria. L. Conti.—p. 106.
Practical Import of Hemogram in Children. G. Ockel.—p. 119.

Dose of Atropin for an Infant.—Ritte found wide individual variations in the size of the dose of atropin required to elicit a reaction in the fourteen infants tested. Little or no difference was noted between the subcutaneous and oral routes of administration, but the individual susceptibility has to be ascertained in each case separately.

Dysergy in Wake of Infectious Diseases in Infants.—Haymann uses the term "dysergy" to express the altered mode of reaction to infections after an infant passes through an acute infectious disease. He reports the results of extensive research in this line, confirming the importance of the dysergy from the clinical standpoint.

Pyuria.—Conti's experience with pyuria in infants has confirmed the supreme importance of the general condition as influencing the course and outcome. And nothing, he asserts, has such an influence on the intensifying of the immunization phenomena as an ample supply of vitamins, especially in pyuria. He treated twenty-nine infants on this basis with the recovery of 86.2 per cent., the duration averaging thirty-one days. The duration was eighty-two days and only 29.1 per cent. recovered of the twenty-four infants that had not been given the extra vitamins. He presents evidence to sustain the symptomatic nature of pyuria. Tentative treatment shows whether the deficiency is in vitamin B or C, or both. Reduced resisting powers and lack of the normal profuse flushing of the urinary passages combine to invite pyuria.

Deutsche medizinische Wochenschrift, Leipzig

51: 931-972 (June 5) 1925

Internal Medicine and Endocrines. Rosenow.—p. 931. Conc'n.
*Tuberculin Allergy and Protection. H. Selter.—p. 933.
*Extrainsular Diabetes. M. Rosenberg and W. B. Meyer.—p. 935.
Apoplexy. A. Hanse.—p. 938.
Resin Colloid Reactions in Cerebrospinal Fluid. Marchionini.—p. 939.
Treatment of Poliomyelitis with "Static Rebuilding." M. Böhm.—p. 942. Cont'd.
Endoscopy and Gastroscopy. W. Sternberg.—p. 943.
*Cohabitation Time and Sex of Child. M. Oelze-Rheinboldt.—p. 945.
*Etiology of Exanthematic Diseases. M. B. Sindoni.—p. 945.
Blood Pressure Quotients. P. Engelen.—p. 947.
Disappearance of Hysteria After Castration. K. Mendel.—p. 947.
*Psychic Infection. B. Hahn.—p. 949.
*Conservative Treatment of Furuncles. Canon.—p. 951.
Gynecology. R. Zimmermann.—p. 952.
Red-Green Blindness. H. Ahlenstiel.—p. 952.
Detention of Indicted Sick Persons. F. Strassmann.—p. 954.
Venereal Diseases in Merchant Marine. W. Brose.—p. 955.
Prohibiting Competition Between Physicians. E. Koch.—p. 956.
Pharmacology of Dermatologic Remedies. S. K. Mayer.—p. 967. Cont'd.

Tuberculin Allergy and Protection Against Tuberculosis.—Selter emphasizes that the fact that tuberculous individuals give the tuberculin reaction does not prove that a tuberculin reaction indicates immunity. He is sceptical about the future of Langer's and Moro's attempts to immunize infants.

Extrainsular Diabetes.—Rosenberg and Meyer publish the history of their cases of glycosuria resisting treatment with insulin. The resistance in the first was due to encephalitis; in the second to overdosage of thyroid extract in myxedema, and in the third, perhaps, to suppuration and extirpation of a testis.

Cohabitation, Menstrual Period and Sex of Child.—In Oelze-Rheinboldt's 113 cases there was a prevalence of boys over girls (34:18) when the coitus took place in the first nine days after the beginning of menstruation, and of girls over boys (18:9) when coitus took place in the last days before menstruation. Yet she does not consider these figures as decisive.

Etiology of Eruptive Diseases.—Sindoni reviews the Italian research on the etiology of scarlet fever, measles, German measles, chickenpox, acute polyarthritis and chorea. In all of these diseases similar micro-organisms have been found, which they differentiate by serologic tests and experiments on animals. She doubts the technic of the authors who have failed to confirm this work.

Psychic Infection Causing Nervous, Seemingly Hereditary Phenomena.—Hahn publishes several histories of nervous disturbances (dislike for food, dysmenorrhea, agoraphobia, asthma), which might be considered—and were in fact so considered by the patients—as inherited. In reality they were only due to psychic infection, and usually originated with the idea of some gain (envying the dysmenorrheic mother who could stay in bed, etc.).

Conservative Treatment of Furuncles.—Canon saw no complications in his 129 cases of furuncles (including twenty-one on the face) treated only by rest in bed and dressings with a solution of aluminum subacetate. He saw several metastatic abscesses in patients who had been operated on for furuncles.

51: 973-1014 (June 12) 1925

Myelitis and Poliomyelitis. P. Schröder.—p. 973.
*Forty Years of Test Meals. I. Boas.—p. 976.
*Dysoxidative Carbonuria. Bickel and Kauffmann-Cosla.—p. 978.
Treatment of Diabetes. E. Fränkel and A. Benatt.—p. 978.
*Periodic Breathing. K. Gollwitzer-Meier.—p. 980.
*Artificial Pneumothorax and the Erythrocytes. O. Moog and W. Pelling.—p. 981.
*Treatment of Mercurial Poisoning. H. J. Stukowski.—p. 983.
*Vitamin Content of Goat's Milk. Nassau and Pogorschelsky.—p. 985.
Treatment of Poliomyelitis with "Static Rebuilding." M. Böhm.—p. 987. Conc'n.
*Resorption of Gas from Chest and Stomach. W. Teschendorf.—p. 989.
Psychoanalytic Treatment. N. Costa.—p. 989.
Roentgen Treatment of Pulmonary Tuberculosis. W. Landau.—p. 990.
Vaccine Treatment of Staphylomycosis of Skin. M. Wolff.—p. 991.
Lead Rubber Apron. H. Lewin.—p. 992.
Pharmacologic Investigations. P. Wolff.—p. 993.
Survey of Gynecology. R. Zimmermann.—p. 994. Conc'n.
Germ Carriers and Legislation. Hoch.—p. 995.
The American Joint Distribution Committee in Poland. H. Strauss.—p. 997.
Pharmacology of Dermatologic Remedies. Mayer.—p. 1007. Conc'n.

Forty Years of Test Meals.—Boas publishes his reminiscences on the invention of the test meal and expression of the stomach contents through the tube. He says that luck and chance contributed to the development of the method by Ewald and himself. The original test meal is still the simplest procedure for orientation.

Dysoxidative Carbonuria.—Bickel and Kauffmann-Cosla use this term for a pathologic increase of carbon compounds in the urine due to deficient oxidation. Diabetes is the extreme, avitaminosis about midway between diabetes and health. Insulin counteracts the condition.

Periodic Breathing.—Gollwitzer-Meier shows that the gas content in the blood in patients with periodic breathing may be different according to the cause (local deficiency in oxygen in the respiratory center or general deficiency in oxygen from lowered irritability of the respiratory center).

Artificial Pneumothorax and the Erythrocytes.—Moog and Pelling attribute the increase in erythrocytes in dogs with artificial pneumothorax to a stimulation of the bone marrow by the air hunger. The pneumothorax polycythemia is not evident in patients.

Treatment of Mercurial Poisoning.—Stukowski found experimentally that decapsulation does not help in toxic anuria.

Vitamin Content of Goat's Milk.—Nassau and Pogorschelsky found little vitamin C in the milk of goats, unless they added three oranges daily to their food. It is possible that the anemia in infants fed with goat's milk may also be due to deficiency of a factor in the milk.

Resorption of Gas from Chest and Stomach.—Teschendorf found in dogs a more rapid resorption of gas from the pleural than from the abdominal cavity. He could introduce 4 liters of acetylene within fifteen minutes without producing pneumothorax for more than a few seconds. Hydrogen sulphid was also rapidly resorbed, 75 c.c. of it causing anesthesia, and 150 c.c. death in a dog of 20 kg.

Medizinische Klinik, Berlin

21: 839-876 (June 5) 1925

*Nystagmus. J. Ohm.—p. 839.
*Adenoids and the Exudative Diathesis. F. Schleissner.—p. 841.
Anatomic Nomenclature of the Lungs. A. Ghon.—p. 843.
*Scrofulous Inflammation of the Eyes. A. Löwenstein.—p. 845.
*Diagnosis of Measles. E. Steinert.—p. 846.
*Fluorin Poisoning. Dyrenfurth and Kipper.—p. 846.
New Way of Psychanalysis. H. von Hattingberg.—p. 849.
Yoghurt Milk in Pediatrics. Lembke.—p. 851.
Sensory Syringomyelia. W. Wette.—p. 853.
*Angina Pectoris; Partial Aneurysm of Heart. Hanser.—p. 854.
Radium Clamp for Laryngology. W. Haardt.—p. 856.
*Practical Significance of Urochromogen. M. Weiss.—p. 857.
Obstetric Breviary. F. Eberhart.—p. 860. Cont'n.
Congenital Syphilis. E. Slawik.—p. 861. Conc'n, p. 900.
Progress in Roentgen Diagnosis. L. Freund.—p. 864.

Nystagmus.—Ohm examined about 1,400 cases of nystagmus in miners and 300 in other persons, making exact registrations. The cause of nystagmus in miners is chiefly the insufficient light. The disturbance was not observed until the safety lamps came into use, and Raudnitz discovered an identical condition in children kept in dark apartments. The frequency of the nystagmus movements varies between 50 and 400 per minute. At the close of the nystagmus, the amplitude of the waves sinks to $\frac{1}{50}$ mm., while the frequency may increase to 12-15 per second. He believes that it is only an exaggeration of a physiologic vibration of the eye, the frequency of which is above 2,000 per minute. The brain impulses seem to be tuned down because of the strain and other causes. The vestibular apparatus and the conscious will also play a rôle.

Adenoids and the Exudative Diathesis.—Schleissner points to the frequency of recurring inflammations of the adenoids in children and infants. General symptoms with high fever predominate clinically, and only a streak of pus in the nasopharynx leads to the correct diagnosis. The condition is based on an exudative diathesis which may be combated medically. An affection of the eustachian tubes makes the operative removal imperative. Nervous symptoms, pavor

nocturnus or enuresis are no indications for the removal of the adenoids.

Etiology of Scrofulous Inflammations of the Eyes.—While acknowledging the allergic (usually tuberculous) basis of phlyctenular inflammations, Löwenstein emphasizes the lack of vitamins as a provoking cause. Recurrences can be prevented only by giving cod liver oil and fresh vegetables.

Diagnosis of Measles.—Steinert observed Koplik's spots on the nasal mucous membrane in three children.

Fluorin Poisoning.—Dyrenfurth and Kipper report a case of fatal poisoning with a fluorin compound. The initial vomiting and rapidly increasing weakness of the heart and especially the possibility of a poisoning with a vermin exterminator should arouse suspicion. Similar to the treatment of poisoning with oxalic acid, the stomach should be rinsed out with lime water, the patient should drink abundantly of it, and calcium chlorid should be injected. The fatal dose for cats was about 0.5 gm. of sodium fluorid per kilogram.

Angina Pectoris, Fever and Partial Aneurysm of Heart.—Hanser emphasizes the significance of slight fever following attacks of angina pectoris. He believes that it is due to infarction of the heart muscle.

Significance of Urochromogen.—Weiss reviews the technic and results of his urochromogen reaction. He dilutes the urine threefold and adds 3 drops of a 0.1 per cent. solution of potassium permanganate to half a test tube. If the urine contains much urobilin, uro-erythrin or bilirubin, he adds 20 gm. of ammonium sulphate to 25 c.c. of urine, and uses the filtrate. A canary yellow color indicates an unusual amount of urochromogen. It is an endogenous product of cleavage of proteins, and contains sulphur. Large amounts are eliminated in typhoid and typhus, measles, scarlet fever and grave tuberculosis. Pneumonia, polyarthritis, influenza and epidemic meningitis do not increase the elimination of urochromogen. The test is simpler than the diazo test.

21: 877-914 (June 12) 1925

Modern Psychotherapy. A. Moll.—p. 877.
Stretching of the Esophagus. L. Nelken and H. Strauss.—p. 882.
*Nonspecific Injections. B. Epstein and F. Heller.—p. 884.
Stenosis of the Cecum and Hyperchromic Anemia. J. Kaznelson.—p. 886.
Treatment of Whooping Cough. F. Frank and I. Glaser.—p. 889.
*Treatment of Intestinal Fistulas. K. Fecher.—p. 890.
*Dispensary for Lung Affections. K. Peyrer.—p. 891.
A Caramel Reaction for Glucose. P. Ziegelroth.—p. 893.
Endocrines and Gastric Ulcer. F. Boenheim.—p. 895.
Mathematic Characterization of Leukocyte Reactions. Habetin.—p. 896.
Legislation on Abortion. F. Riss.—p. 912.

Biologic Reaction After Nonspecific Injections.—Epstein and Heller found the allergic reaction to injections of foreign proteins in the first three months of life only a little over 33 per cent. more frequent than in older infants (46 per cent.), but otherwise the same. Grave shock may occur. Premature infants also may be supersensitive.

Treatment of Intestinal Fistulas.—Fecher had good results in two cases of postoperative intestinal fistulas with introduction of cotton soaked in oil.

Dispensary for Lung Affections.—A special department of the Vienna Policlinic is devoted to the examination of children for pulmonary diseases. Peyrer publishes the results in 1,000 cases. The roentgen findings of a pleurisy or primary focus are reliable. Enlarged hilum shadows occur also in nontuberculous children.

Münchener medizinische Wochenschrift, Munich

72: 973-1014 (June 12) 1925

Treatment of Diabetes. R. Jaksch-Wartenhorst.—p. 973.
Action of Ions and Insulin in Dysoxidative Carbonuria. A. Bickel and O. Kauffmann-Cosla.—p. 976.
Subcutaneous and Intracutaneous Introduction of Insulin. J. Fritz.—p. 976.
*The Sperma and Artificial Fecundation. Mettenleiter.—p. 977.
Breast Nursing Ability and Weight at Birth. R. Ganther and J. Schoedel.—p. 980.
*Syphilitic Changes of Organs. Gürich.—p. 980.
Buerker's Colorimeter. F. Lebermann.—p. 982.
Measuring Radiant Energy. H. Malten.—p. 985.
Sedimentation Test in Thermal Baths. Schneyer.—p. 986.
Treatment of Furuncles. J. Schütz.—p. 988.
Epidemics in Russia. H. Zeiss.—p. 991.
Medicolegal Obstetrics. VI. M. Hofmeier.—p. 992.
Exploratory Incision in Tumors. A. Krecke.—p. 994.
State Medicine in Bavaria. H. Schöppler.—p. 996.

The Sperm and Artificial Fecundation.—Mettenleiter made experiments on the action of various fluids on the spermatozoa. A buffered Ringer solution with addition of serum preserved them for 100 hours. He recommends in azoospermia from bilateral epididymitis to aspirate some sperm from the tail of the epididymis, mix it with a few drops of a 5 per cent. glucose solution, and inject 2-3 drops into the uterus. Artificial fecundation seems to have been used for the first time in 1322 by an Arabian who stole the sperma of a valuable horse.

Syphilitic Changes of Organs.—Gürich's necropsy statistics show that internal changes from syphilis are becoming much more frequent than the skin lesions.

Wiener klinische Wochenschrift, Vienna

38: 601-662 (June 6) 1925

Beginnings of Gynecology in Vienna. I. Fischer.—p. 601.
Uselessness of the Term "Metropathy." L. Adler.—p. 605.
Fundal Cervicovaginal Fistula. R. Bauer.—p. 607.
Hernias of Douglas' Pouch. J. Fabricius.—p. 608.
*Hemorrhages After Interventions on the Follicular Apparatus. J. Halban and R. Köhler.—p. 612.
*Infiltrations of Cheeks in the New-Born. H. Heidler.—p. 614.
*Changes in Menstruation Rhythm. R. Hofstätter.—p. 618.
Leukorrhea and Its Changes After Various Irrigations. H. Kamniker and A. L. Schmid.—p. 621.
*Prognosis of Labor. H. Katz.—p. 625.
*Micro-Abderhalden Reaction in Diagnosis of Abdominal Pregnancy. H. Katz and A. Szenes.—p. 629.
Surgery of Pelvic Inflammations. H. Keitler.—p. 631.
*Granular Colpitis. F. Kermauner.—p. 633.
*Acid and Alkaline Genital Secretion. Kraul and Bodnar.—p. 634.
*Uterine Scars in Pregnancy and Labor. H. Peham.—p. 637.
Nidation of Human Ovum. H. Peters.—p. 639.
*Hemostasis by External Manipulations. L. Piskaček.—p. 640.
Forceps. O. Pritzi.—p. 641.
Purulent Nephritis After Vagina-Ureter Fistulas. J. Schiffmann and L. Szamek.—p. 644.
*Calcium Content of Leukorrhea and Lochia. A. Szenes.—p. 648.
*Influence of Ovarian Function on Vaginal Content. H. Thaler.—p. 651.
Results in Cancer of Cervix. W. Weibel.—p. 656.
Treatment of Leukorrhea. P. Werner.—p. 660.

Hemorrhages After Intervention on the Follicular Apparatus.—Halban and Köhler observed uterine hemorrhage after opening ripe follicles in the ovary. The bleeding was not as strong as the menstruation induced by extirpation of the corpus luteum, and it did not modify the menstrual cycle as this latter intervention does. They believe that the premature opening of the follicle—before the granulosa is ripe enough to aid the remnants of the previous corpus in preventing the menstruation—causes the metrorrhagia. The follicle fluid stimulates the bleeding, which accounts for the menorrhagia in microcystic degeneration of the ovaries, with its precipitated rupture of the follicles.

Infiltrations of the Cheeks of the New-Born a Forceps Injury.—Heidler observed an infant with infiltrations in both cheeks, developing ten days after birth. W. Knöpfelmacher and N. Swoboda suggested forceps as a probable cause of this so-called sclerodermia of the new-born—especially because it heals without atrophy. He therefore examined carefully all the new-born infants and found similar infiltrations in a third of the forceps deliveries.

Spontaneous and Artificial Changes in Menstruation Rhythm.—Hofstätter discusses the various physical and mental injuries capable of inducing a menstruation which is followed after the typical interval by a new menstruation, thus changing the former rhythm. He believes that outside of the regular spontaneous ovulation, a provoked ovulation may also occur in women. It is even possible that a spontaneous ovulation occurs only when the ripening follicle did not burst because of lack of sufficiently strong irritants—usually of sexual nature. He does not believe that the corpus luteum produces or inhibits menstruation. Several follicles may burst during one menstrual cycle. He thinks that the significance of this phenomenon for the organic and mental life of women has been underestimated hitherto.

Distance Between the Spine of the Ilium and the Trochanter in Prognosis of Childbirth.—Katz measured the distance

between the anterior superior spine and the most prominent point of the trochanter. It was 11-12 cm. or more in women who had a normal labor, rarely it was only 10.5 cm. In rachitic flat pelvis (not in simple flat), when the labor was difficult, the distance was about 10 cm.

Micro-Abderhalden Reaction in Diagnosis of Abdominal Pregnancy.—Katz and Szenes obtained with the refractometric method correct results in fifty of fifty-four women with doubtful extra-uterine pregnancy. Three cases were false positives, one a false negative.

Granular Colpitis.—Kermauner had fair results with injections of pituitary extract in granular colpitis. He refers in particular to forty-one cases in which gonococci could not be found.

Acid and Alkaline Values of Genital Secretion.—Kraul and Bodnar determined the titration and true acidity of the vaginal and cervical contents. The cervical secretion is physiologically alkaline, but vaginal bacilli may form acid from it.

Scars in the Uterus as Affecting Pregnancy and Delivery.—Peham reports a case and deals with the cause of rupture of the uterus in pregnant women after previous gynecologic operations (excision of a tube, etc.). Careful work—especially avoiding the interposition of mucosa between the muscle fibers—may prevent some, but not all of these mishaps. Therefore, caution in indications for opening the uterus in mature women is necessary.

Arrest of Postpartum Hemorrhage from Inertia by External Procedures.—Piskaček empties the patient's bladder in postpartum hemorrhage from atony. Then he lifts the uterus between the thumb and middle finger of one hand, pressing above the symphysis. With another grasp, the fingers reach below the contraction ring of the uterus and compress the cervix with the uterine arteries. The other hand massages the fundus. A similar manipulation had been published before by L. Goth. It is necessary to keep up the compression for ten minutes.

Calcium Content of Leukorrhea and Lochia.—Szenes found with the same method 6.08 mg. of calcium per hundred cubic centimeters; 12.025 in the leukorrheic secretion, and 9.988 in the lochia. Pus contains more calcium than the secretion in leukorrhea. Ingestion of calcium salts by the mouth increased the calcium content of the genital secretion.

Influence of Ovarian Function on Vaginal Content.—Thaler discusses the facts which speak for an influence of the ovarian function on the contents of the vagina. He observed frequently a spontaneous purification of the vaginal discharge during pregnancy. This may be the reason for the success of irrigation with 0.5 per cent. lactic acid. He had fine results when using a 5 per cent. alcoholic solution of salicylic acid (15 c.c. to 1 liter of water). With a purulent discharge, 3 gm. of resorcin may be added to 100 c.c. of the alcoholic stock (1 per cent.) solution.

Zentralblatt für Chirugie, Leipzig

52: 1345-1408 (June 20) 1925

The Diazo Reaction in Bone and Joint Tuberculosis. G. Kelemen.—p. 1346.
Suspension Stability of the Blood in Surgical Cases. G. Frostell.—p. 1348.
Surgery of Gallbladder. J. Vigyázo and E. Schulhof.—p. 1351.
Operative Treatment of Bile Fistulas. J. Berendes.—p. 1354.
Plastic Closing of Large Abdominal Hernias. O. Orth.—p. 1356.
Chronic Perihepatitis and Cirrhosis of Liver. W. Kausch.—p. 1357.

Zentralblatt für Gynäkologie, Leipzig

49: 1345-1408 (June 20) 1925

Relations Between Ovarian and Uterine Function. Meyer.—p. 1345.
Doderlein's "Vagina Bacillus." W. Rother.—p. 1357.
Mechanism of Development of Diseases from Diet as Revealed in Eclampsia Statistics. W. Gessner.—p. 1360.
Interstitial Pregnancy. K. Littauer.—p. 1373.
Chlorids in Maternal and Fetal Blood. K. Hellmuth.—p. 1382.
Use of Obstetric Binder Based on Law of Peristaltic Movements. J. Werboff.—p. 1384.
Horse Serum in Pregnancy Toxicosis. I. Polonsky.—p. 1396.
Placenta Retained 114 Hours After Delivery at Term. Koch.—p. 1399.
Torsion of Fallopian Tube. E. Haim.—p. 1401.

Zentralblatt für innere Medizin, Leipzig

46: 429-452 (June 6) 1925

Regulation of Acid-Alkali Balance in Blood. A. Lublin.—p. 429.
*Choked Disk in Nephritis. S. Larssan.—p. 434.

Choked Disk in Nephritis.—Larssan observed choked disk sometimes as the only ocular symptom of nephritis with hypertension. It is more frequently associated with changes of the retina. Because of the increased pressure of the cerebrospinal fluid, he regards the choked disk as a simple consequence of the increased intracranial pressure in these patients.

Časopis lékařů českých, Prague

67: 877-912 (June 6) 1925

*Treatment of Cardiospasm. V. Maydl.—p. 877.
Whitening of Flour. G. Kabrhel.—p. 883. Cont'd.
Diseases of the Pancreas. V. Kreisinger.—p. 886.
Internal Treatment of Cholelithiasis. B. Augustin.—p. 897.
*Preparation of Herudin. J. Vignati.—p. 898.

Treatment of Cardiospasm.—Maydl was well satisfied with the results of forcible dilatation of the cardia with Starck's sound in five patients.

Preparation of Herudin.—Vignati recommends to fix the heads of the leeches in absolute alcohol, then to dry them at 40-50 C., and extract the powder for ten minutes with boiling salt solution (10 c.c. per head). He dries the extract in test tubes for taking blood (almost 0.2 c.c. per 3 c.c. of blood) and dissolves it before taking the blood, with 0.3-5 c.c. of salt solution. Herudin is not anticomplementary, and the plasma is, according to Kabelík, superior to serum for serologic tests.

Finska Läkaresällskapets Handlingar, Helsingfors

67: 399-498 (May) 1925

Dislocation and Dislocation Fractures of Wrist. Brofeldt.—p. 399.
Ollier's Disease. L. J. Lindström.—p. 415.
Sanocrysin Treatment in Finland Sanatorium. E. Schauman.—p. 433.

Hospitalstidende, Copenhagen

68: 409-432 (May 7) 1925

Epidemic Encephalitis and Poliomyelitis in Denmark. A. V. Neel.—p. 409. Conc'n.
Cancer in Scars. F. Bang.—p. 415.

Hygiea, Stockholm

87: 369-416 (May 31) 1925

Chemical Processes in Stomach in Gallstone Disease and Masked Cholelithiasis. L. von Aldor.—p. 371.
Medical History of Japan. J. Almkvist.—p. 395. Cont'n.
Case of Steeple Skull. H. Olivecrona.—p. 409.
Diffuse Phlegmonous Gastritis with Recovery. S. von Stapelmohr.—p. 414.

Ugeskrift for Læger, Copenhagen

87: 345-368 (April 2) 1925

*Delivery in Toilet of Moving Train. J. Fog.—p. 345.
Modified Sahli Hemometer. A. Thisted.—p. 352.
History of Diabetes. J. W. S. Johnsson.—p. 352.
Fatal Burn from Misunderstood Directions for Steam Bath. J. E. Mauritzen.—p. 353.

Childbirth in Train Toilet.—Fog compares with three on record a new instance of a new-born babe found on the railroad track after a passenger train had passed. The interval before the children were found ranged from a few minutes to an hour and a half, but two of the four infants survived and developed normally, including one that had lain on the track for thirty minutes in a cold north wind at 9 C. The mother in this case was on her way to the maternity, and was absolutely unaware that she had lost her child on the way. It was her second delivery. One of the women (Austria) was convicted of infanticide as the mechanism of the toilet and the injuries on the child showed that extra force had been applied to push the child through and out. In one instance (Denmark) the mother was never discovered. The toilet showed no trace of blood. This was the only one of the four children found dead. Fog experimented with two infant cadavers, and thus confirmed the surprising resistance of the skull of the new-born to even grave trauma. He would like to hear of similar experiences elsewhere. His address is the University Retsmedicinske Institut, Copenhagen.